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GENERAL STUDIES (TEST CODE : 2085)

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Medium Eng./Hindi	ENGLISH	Registration Number	1157317
Center	ONLINE	Date	20/07/2023

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
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6	10	
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9	10	
10	10	
11	15	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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All the Best

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1. पाल साम्राज्य को बौद्ध कला के विशिष्ट रूप के लिए जाना जाता है। इस संदर्भ में, कला के क्षेत्र में पाल वंश के योगदानों पर चर्चा कीजिए।
The Pala Empire is known for a distinctive form of Buddhist art. In this context, discuss the contributions made by the Pala dynasty towards art. (Answer in 150 words) 10

A. Pala empire was established by Gopala in region around Bengal and prospered from 7 - 11th century. It made numerous contribution to Buddhism and to art.

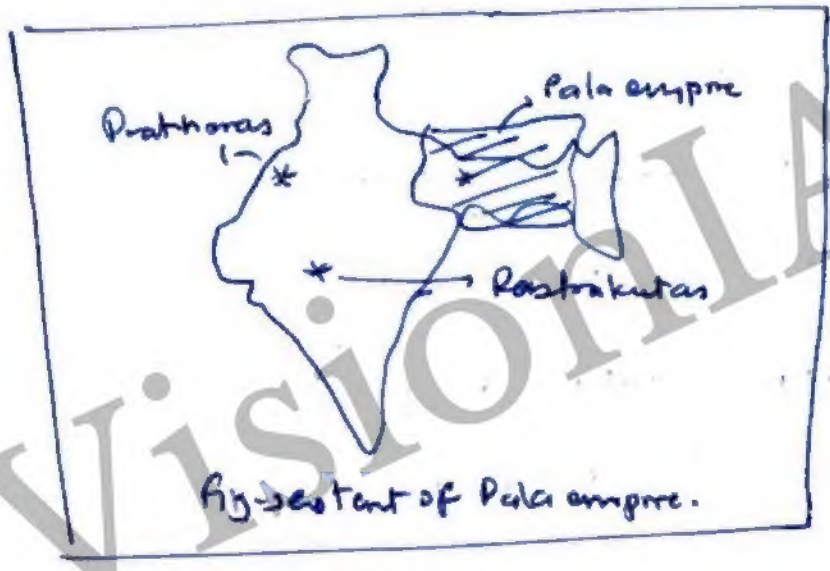

fig-extent of Pala empire.

Contribution towards Art.

① Contribution towards Buddhism and Buddhist Art:

1.1 Establishment of universities such as ~~Vikramshila~~ Vikramshila for Buddhism study.

1.2 Promotion of Stupa establishment.

1.3 Donations to Buddhist monks and teachers.

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1.4 Promotion of Buddhist literature

(2) Contribution towards Fine art and cultural architecture in general:

(2.1) promoted Bangla roofs : Borrowed by Akbar in Infrastructure.

2.2 Promotion of all religions: Hinduism and Jainism also proliferated.

2.3 Donations to temples: temples were also promoted in Bengal region.

2.4 Mixture of Gupta style with Regional variations ~~prop~~ prospered during the era.

Pala dynasty were thus patrons of Buddhism but also promoted other religions. Their contribution paved way for mixed culture of Bengal that we see today

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2. आदि शंकराचार्य ने अपनी महान क्षमता से हिंदू धर्म को पुनः स्थापित किया और उत्कृष्ट स्पष्टीकरण प्रस्तुत करते हुए वैदिक परंपरा को फिर से प्रतिष्ठित किया। चर्चा कीजिए।
It was Adi Shankaracharya's genius that reinvented Hinduism and re-established the Vedic tradition with excellent commentaries. Discuss. (Answer in 150 words) 10

Adi Shankaracharya was vedic monk from south India who played a crucial role in the restablishment of vedic traditions in facing hostile attacks from philosophers Jainism and Buddhism.

1. Reinventing Hinduism

1.1 Discarded the caste distinctions that become problematic to society.

1.2 Established the concept of ~~Advaita~~. 'Advaita' → ~~as Brahm~~

↳ It explained that soul and god, the 'Brahma' are same and there is no distinction between the two.

1.3 Pointed out knowledge as the way for salvation

↳ Devotion was also emphasized by Adi Shankaracharya.

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(2) Re-establishment of vedic practices.

2.1 Established Maths or centres of Vedic practices in various parts of the country.

2.2 Defeated Buddhist and Jaina philosophers in philosophic debates

2.3 Vedic culture as state religion: was firmly established after his victories over other philosophers.
eg- emperors expelled Buddhist and Jainism philosophers.

Adi Shankaracharya was thus a shining example of intellect and wisdom and his theories later paves way for further refinements such as Vishishtadvaita and Dvaita.

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3. औपनिवेशिक वन नीतियां स्थानीय लोगों के कल्याण और पर्यावरण की चिंता किए बिना ब्रिटिश साम्राज्य की जरूरतों से प्रेरित थीं। भारत के संदर्भ में चर्चा कीजिए।
The colonial forest policies were driven by the needs of the British Empire with no concern for the well-being of the locals and the environment. Discuss in the context of India. (Answer in 150 words) 10

British empire's policies were directed towards ~~benefit~~ benefit and profit to British empire and every sector saw manifestation of these policies. Forest policies were no different in this aspect.

Forest policies of British

① Saw the forests as commercial enterprises: resulting in deforestation.

② Did not recognize the property system of tribals.

③ established protected forest areas and restricted entry in these areas.

④ commercial plantations instead of Natural biodiversity

⑤ Large infilteration of foreign planters and moneylenders: 'Dikus' by the ~~local~~ locals.

These policies fulfilled the British needs of Timber for railways and wood for infrastructure as well as

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Bamboo and sugarcane for commercial purposes.

Impact of these on locals and environment.

1. Deforestation of pristine forests.
2. Reduced diversity due to plantation of single crops.
3. Violation of property rights of locals.
4. Reduction and stoppage of Slash and burn Agriculture.
5. locals were pushed into debts by moneylenders.
6. Lack of minor forest produce for locals : leading to unemployment.

These practices fuelled the expressions in terms of Peasant movements such as Santhal rebellion and Munda rebellion in later part of the century.

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4. पंचशील और गुटनिरपेक्षता के सिद्धांतों ने शीत युद्ध के दौर में भारत को मार्गदर्शित करने में सहायता प्रदान की। चर्चा कीजिए।
The principles of Panchsheel and Non-Alignment aided India in maneuvering the Cold War era. Discuss. (Answer in 150 words) 10

A. Panchsheel referred to five principle of peace and non interference in Affairs of each other propagated by India.

Non alignment referred to strategic autonomy of country and choice and need based alliances.

These two principles lead to Indian maneuvering in cold war:

Positives.

1. ~~Vietnam~~ Korean war: India took a principled stand of ~~non~~ anti colonization and voted against both USSR and US in this regard.
   → this helped UN play a crucial role in this war.

2. ~~Gr~~ India emerged as the leader of developing Nations owing to these principles.

3. Vietnam war: Similar stand was taken by India during the struggle between Communism and capitalism.

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Both of these wars suggest that The principles helped India from getting dragged into unnecessary wars

④ Equal help from both the blocks:

eg- India got help in defences from USSR and in food from US (PL-480).

⑤ Respect all over the world:

India commanded respect regarding principled diplomacy and strategic autonomy concept was recognised by Nations of both blocks.

Issues/Negatives.

① It stopped India from developing closer relations towards:

eg- This was reflected by on India change in bilateral relations after disintegration of USSR.

NAM and Panchsheel promoted India as a balanced player and benefits of strategic autonomy are still being repeated today by Indian foreign policy.

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5. 19वीं शताब्दी के यूरोप की प्रमुख विशेषताओं में से एक राष्ट्रीय एकीकरण के लिए संघर्ष था। जर्मनी के संदर्भ में चर्चा कीजिए।
One of the major features of the 19th century Europe was the struggle for national unification. Discuss in the context of Germany. (Answer in 150 words) 10

National unification on linguistic lines was defining feature of majority of European countries and 19th witnessed numerous such unifications.

eg → Italian unification, German unification.

German unification

↓

German unification consisted of uniting all the German speaking areas under the Prussian leadership.

- 'Bismarck' played a key role in this unification.

Steps of German unification

① Economic integration: 'Zollverein' was formed to tie the Northern and southern germanic states to germany or Prussian economy.

② Policy of blood and Iron: When economy was strengthened Bismarck focused on arming of the Nations.

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③ Attack on Denmark by Austria: To capture Schelswig and Hostein was first step in the process.

④ Austro-prussian War of 1866: led to the winning over of Northern germanic states by Prussia

⑤ Franco Prussian war of 1871: ~~lead~~ led to capturing Southern germanic states by Prussia and german unification was complete.

⑥ Ideological role: Linguistic impulses were promoted by Napoleon initially and later by Giuseppe Mazzini which eventually ~~lead~~ led to unification.

German unification was thus a complex process that shaped 19th Century Europe. Though it ~~lead~~ these Nationalistic impulses succeeded, they created a fragile system that eventually led to World war I.

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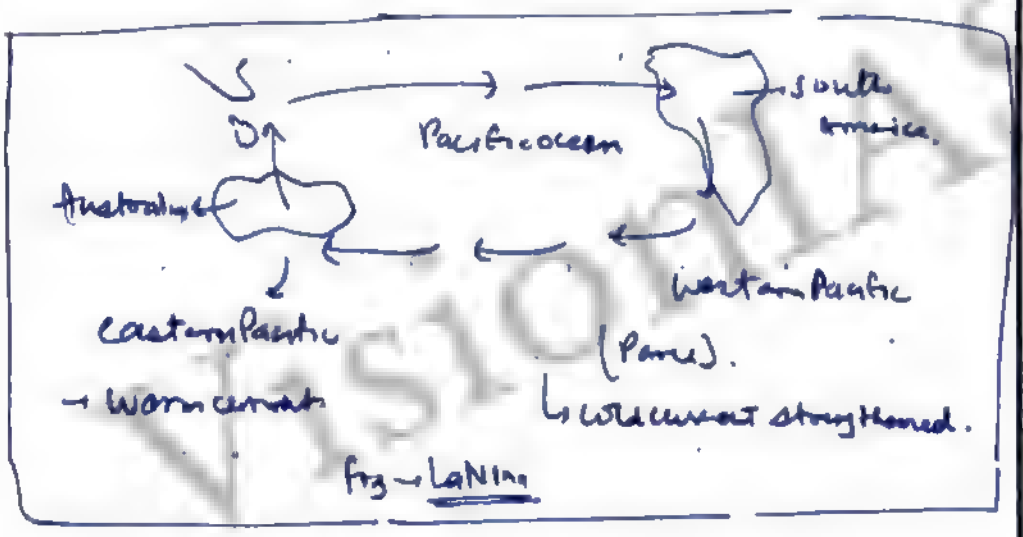
6. ट्रिपल डिप ला नीना परिघटना क्या है? विश्व के विभिन्न क्षेत्रों पर इसके संभावित प्रभाव की विवेचना कीजिए।
What is the triple dip La Niña phenomenon? Discuss its likely impact on different regions of the world. (Answer in 150 words) 10

La lina refers to unusual cooling of eastern pacific leading strong atmospheric circulation. Triple dip La Nina happens when this phenomena happens for three continuous times.



LaNina thus strengthens the current and atmospheric circulation.

Impact on the different regions of the world.

① Strong monsoon in Indian subcontinent: leading to floods and better agricultural outcomes.

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(2) Lack of rainfall in Australia. : leading to wild fires and droughts.

(3) Drynes in Western South America → drought in Peru and adjacent countries.

(4) Floods in China: owing to heavy precipitation.

(5) Upwelling of cold water in western Pacific → leading to better fishing activities in that region of the world.

Triple dip La Nina has been witnessed in recent times. El Nino usually follows La Nina and can have opposite impacts on climates around the world.

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7. जलविद्युत दुनिया भर में निम्न कार्बन उत्सर्जन वाली ऊर्जा आपूर्ति का एक प्रमुख स्रोत है, लेकिन भारत के कुल इलेक्ट्रिसिटी मिक्स में इसकी हिस्सेदारी बहुत कम बनी हुई है। चर्चा कीजिए।
Hydropower is a major source of low-carbon energy supply across the world but its share in India's total electricity generation remains low. Discuss. (Answer in 150 words) 10

Hydropower refers to tapping of electricity generation potential from flowing water. It is carbon-free source.

Hydropower is the 3rd largest renewable energy provider for India.

But its potential is much higher than currently tapped.

Reasons for low share:

① Highly capital intensive nature of projects often running out of stipulated timelines.

② Impacts on environment: leads to rehabilitation of people and impact on environment.

eg- Methane emmission from flooded land.

③ Competition from other sources: Solar energy provides easier and low cost electricity.

④ Lack of government policies: until recently hydropower plants greater than 25 MW were not

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included in priority sector lending by government.

Steps taken by government.

- Priority sector ~~lend~~ lending.
- Push towards renewable (20 to carbon neutality)
- PPP in hydropower projects.

Way forward.

① Low gigawatt power plants in multiple number rather one large power plant should be established.

② Environment impact assessment is necessary for such projects to ensure minimum environmental disturbance.

③ Effective promotion of other sources such as Solar to reduce dependance on single source.

Though hydropower promises clean energy, challenges are many. In this regard co-ordination with local solution for its impacts and with states is necessary.

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8. हाल ही में तुर्किये में आए भूकंप के संदर्भ में, सिस्मिक गैप की अवधारणा की व्याख्या कीजिए। साथ ही, भूकंप की तीव्रता के लिए उत्तरदायी कारणों को भी सूचीबद्ध कीजिए।
Explain the concept of seismic gap in the context of the recent earthquake in Turkey. Also, enlist the reasons behind the severity of the earthquake. (Answer in 150 words) 10

A. Seismic gap refers to the area where two plates diverge or transform leading to increasing number of earthquakes in the area.

Turkey witnessed several earthquakes in the area upto the magnitude of 7.

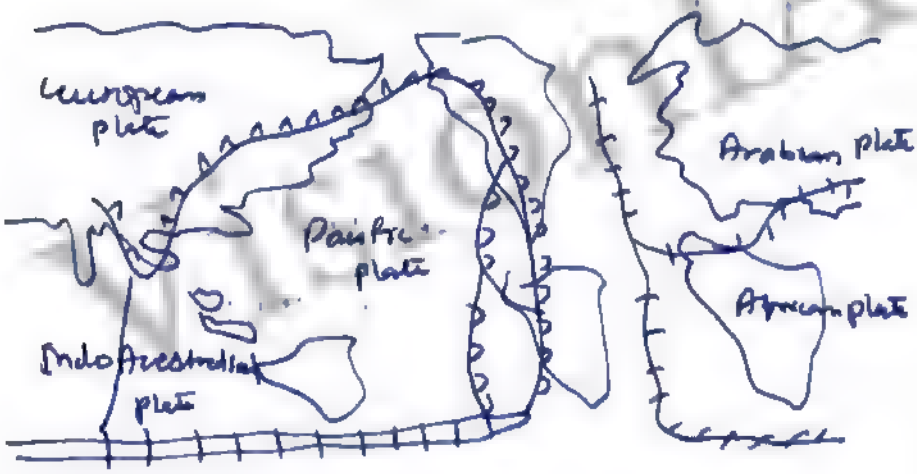

Fig - Plate tectonics and its impact on earthquakes.

Reasons behind the severity of earthquake

① Shallow epicentre : Epicentre was near the surface leading to greater intensity and maximum

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damage.

(II) Multiple earthquake: Several earthquakes in short amount of time were witnessed.

(III) Dynamic Nature of Arabian plate: multiple faults running across the plate increased the severity.

(IV) Accumulated energy → Last earthquake was witnessed in 1170. Accumulated energy in so many years leads to the destruction.

In this regard, earthquake prone buildings should be accompanied by zoning and mapping of critical area. Implementation of tender framework should be considered.

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9. भारत में विवाहों की हालिया प्रवृतियों पर प्रकाश डालते हुए, व्याख्या कीजिए कि समलैंगिक विवाह के कानूनी समर्थन को मौलिक महत्व का मुद्दा क्यों कहा जा रहा है।
Highlighting the recent trends in marriages in India, explain why the legal backing of same-sex marriage is being termed as an issue of seminal importance. (Answer in 150 words) 10

Marriage refers to a social relationship accepted by society and sanctioned by law between two people.

Marriages in recent times have been witnessing changes.

Recent trends in marriages.

- from procreation as the aim to life long companionship
- role of bride and groom in selecting partners emerging.
- Commercialisation of marriage
  eg- Shadi.com
- Equal roles for both the people from earlier trend of subordination of women.

Legal Backing of Same sex marriage as issue of Seminal importance:

① flowing from constitution → Article 14 promises

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equality of ~~fam~~ people irrespective of sexual orientation.

Article 21 promises similar rights.

② Supreme court judgement: After decriminalisation of Article 377 in Navtej Singh Jauhar case, legal backing of marriage is the natural way forward.

③ Discrimination against ~~same~~ same sex couple: In areas such as apartment finding and in hotels necessitates it.

④ ~~D~~ The granting of rights to ~~same sex~~ sex couples does not take away ~~any~~ any rights from opposite sexes and society, thus emphasising the criticism of opposition.

⑤ Ancient India reflects such traditions.
eg- Khajuraho temples.

Thoughit is a matter of sensitive importance, consensus ~~and~~ acceptance within society of ~~same sex~~ same sex marriage is important as marriage is a social institution.

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10. परस्पर संबद्ध विश्व में मानसिक कल्याण को प्रभावित करने वाले कारकों की बहुलता को ध्यान में रखते हुए, बेहतर मानसिक स्वास्थ्य देखभाल प्राप्त करने में आने वाली विभिन्न चुनौतियों पर चर्चा कीजिए।

Considering the multiplicity of factors affecting the mental well-being in an inter-connected world, discuss the various challenges in achieving sound mental healthcare. (Answer in 150 words) 10

A. Mental health refers to the sound mental environment and well being of a person, necessary to perform the basic functions in everyday life.

Factor affecting mental health in interconnected world:

- Workstress: of multinational companies.
- discrimination on the basis of caste, creed, religion.
- family and related stress.
- changing life choices: in ~~young~~ adolescents and youngsters.

Challenges in achieving sound mental healthcare:

① Social ~~taboo~~ tabboo: mental health is still not talked about in educational curriculum in schools.

② Expensive costly psychiatrists acts as inhibitor.

③ Lack of awareness among people of institutions that exist.

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(4) Rural urban divide in healthcare: about 5% of Primary health centres have no doctor.

Steps taken
- tele manas app
- e-Sanjivani
- awareness by NIMHANS about mental health issues.

Way forward
- Increasing Spending on healthcare (2.5%) (National health policy)
- educating people about mental health issues.
- lowering cost of mental health institutions to standardising the mental health treatments.
- maintaining better work life balancing: this should be promoted in MNCs.

Mental health issues affect almost half of ~~young~~ adult population of India and thus calls for measures to solve the issue, so that people can achieve healthy and happy life

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11. प्राचीन काल से लेकर आधुनिक काल तक भारत में प्रमुख मुद्राशास्त्र चरणों का सविस्तार वर्णन कीजिए। साथ ही, चर्चा कीजिए कि सिक्कों का अध्ययन किस प्रकार इतिहास को समझने में मदद करता है।

Elaborate upon the major numismatic stages in India from the ancient to modern times. Also, discuss how the study of coins helps in understanding history. (Answer in 250 words) 15

A. Numismatics refers to study of coins from different historical times. Indian history has witnessed a sea change in numismatics from vedic era to British phase.

Numismatic changes/stages of India

① Vedic/Later vedic :

→ Early vedic times were devoid of coins and practised barter.

→ Later vedic times witnessed the rise of silver coins known as 'Nishka' or 'Satmana.'

② Age of empires

→ different Mahajanapads issued various coins related to their dynasties.

→ Most of the coins were related to Magadhan empire.

③ Mauryan coins

Mauryan coins consisted of Peacock and crescent shaped

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Symbols.

↳ mostly pressed coins were emulated.

(4) Coins by central Asian tribes.

↳ most of central Asian empires issued coins such as Tetradrachms and Shekas.

↳ Kushan's issued gold coins and the purity of Gold were better than Guptas.

↳ Bust head of emperor.

(5) Gupta Era

→ Gold, Silver coins but low purity.

→ consisted symbols of emperor (eg - Samudragupta veena playing picture)

(6) Satvahanas.

→ Issued gold coins

→ Roman coins also found.

(7) Medieval age

↳ In Delhi sultanate coins were issued by Khilji sultans. consisted of Quranic verses and name of emperor.

↳ Sher shah Suri started 'Rupya'.

↳ Muhammad Tughlaq experimented with token currency but failed.

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↳ Akbar issued Din-i-Ilahi coins.

③ Modern age: Britishers established Rupya as the designated coin for transaction, backed by coinage Act.

Role of coins in understanding history

① Helps in determining the extent of nationalism penetrating the society.

eg- How in the vedic age people used barter and this was replaced by coins.

② Trade activities with outside countries. eg- Roman coins in Satavahanas time.

③ Dynasty details: eg- Satavahanas are detailed mentioned by Jogalthambi coins.

④ War and conquests: Often described upon coins.

eg- Prithviraj and Ghori on the same coin.

⑤ Extent of urbanisation: Lack of gold content in gupta coins indicate decay in economic healthy empire.

Numismatics thus plays a central role in historical studies giving details about the role of money in the earlier societies.

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12. दलित अधिकारों के समर्थक के रूप में प्रसिद्ध होने के बावजूद, डॉ. बी. आर. अम्बेडकर का योगदान इससे कहीं अधिक है और इसमें कई अन्य विषय भी शामिल हैं। सविस्तार वर्णन कीजिए।
Despite being celebrated as the champion of Dalit rights, the contributions of Dr. B.R. Ambedkar went far beyond that and encompassed a wide range of issues. Elaborate. (Answer in 250 words) 15

A. Dr BR Ambedkar was a shining star in modern Indian history. He is also known as 'modern Manu' or father of Indian constitution.

His contributions expand beyond the champion of Dalit rights.

(I) Dalit rights.

1.1 → fought for equal rights for Dalits during freedom struggle.
eg → Mahad water tank agitation, 1927.
→ All India scheduled class federation.

1.2 → Provisions for equality for Dalits in Indian constitution
eg - Article 14 (equality)
Article 17 (abolishment of untouchability)

(II) Women's rights.

→ Pointed out that the measure of progress of society is measured by rights of women.

→ Article 14 ensured the rights of women were equal to men.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(III) Constitution of India : He was the chairman of the drafting committee of the constitution.

- major provisions that he supported.

3.1 Emergency measures : supported President's rule but hoped that it would remain a 'dead letter'.

3.2 propagated the concept of distributive justice, ie social justice and economic justice.

3.3 Helped to integrate various provisions from differing constitutions of the world into our constitution.

3.4 Advocated Directive principles of state policy and pointed out that the public mandate behind these provision will act as a ~~major~~ force to implement.

(IV) Societal values.

4.1 Advocated uniform civil code for all religions : Article 44 was advocated by him. At the same time he also pointed out that some criminal laws are same

, Same personal laws should be present for ~~and~~ everyone.

4.2 Pointed out the working of Indian constitution will promote federalism.

He was strong advocate for autonomy of states.

4.3 Explained the relationship between equality, liberty and fraternity in the country's preamble.

4.4. Strong advocate of secular values mentioned in Indian constitution.

Dr BR Ambedkar, thus acted as a main editor of constitution and the values of equality, fraternity and secularism that India enjoys today were started and advocated by him.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

13. 1930-34 के सविनय अवज्ञा आंदोलन को एक अद्वितीय विशेषता, क्षेत्रीय स्थानिक पैटर्न और लामबंदी के नए तरीकों को शामिल करने के लिए जाना जाता है। स्पष्ट कीजिए।
The Civil Disobedience Movement of 1930-34 was marked by a unique character, regional spatial patterns and employment of new mobilization techniques. Elucidate. (Answer in 250 words) 15

A. Civil disobedience movement was started by Mahatma Gandhi by picking up salt from Dandi in opposition to salt tax imposed by British. It soon engulfed the entire country and was marked with unique features.

Unique character of civil disobedience movement:

1.1 Secular movement: Involved both Hindus and Muslims against the British rule.

1.2 ~~Employment~~ Involvement of women: Sarojini Naidu convinced Mahatma Gandhi for involvement of women.
↳ This led to their immense participation.

1.3 Involvement of the capitalist class: While capitalist class was somewhat opposed to Non-co-operation movement, they supported the Civil Disobedience

movement whole heartedly.

1.4 Call to not pay taxes: Breaking of laws was not employed by Indian freedom fighters in early mass movements.

Regional spatial patterns of the movement

2.1 In the Northwest India: Red shirts or Khudai khitmadgars started Non-tax campaign under Abdul gaffar khan.

2.2. In chennai: C. Rajgopalachari did break the salt law and started civil disobidience.

2.3. In the area around maharashtra: Forest tax was not paid by people living around it.

2.4 Student's participation in Northeast and central India: leading of flessing unions to stop their participation.

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

New mobilisation techniques.

3.1 Prabhat Pheris: In the morning morning were used by people to spread awareness among the masses.

3.2 Volunteer door to door samiti: To educate people about the movement.

3.3 Street plays to invite people.

3.4 Calls by popular leaders such as Mahatma Gandhi and Subhash Bose.

The characteristics of the Civil disobidience movement were implemented alongside the values of Nonviolence and satyagrah. Though it was ended in 1934, awareness that generated played a crucial role in subsequent movements.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

14. भारत के तटीय क्षेत्रों में द्वीपों के डूबने की परिघटना के लिए उत्तरदायी कारणों की व्याख्या कीजिए। साथ ही, संपूर्ण राष्ट्र और विशेष रूप से द्वीपीय समुदाय के लिए इसके संभावित प्रभावों का मूल्यांकन कीजिए।

Explain the underlying causes behind the phenomenon of sinking islands in India's coastal regions. Also, evaluate its possible implications for the nation as a whole and island communities in particular. (Answer in 250 words) 15

7516 km long coastline of India has numerous offshore Islands. In recent times sinking of Island, i.e subsidence of land below sea level has seen witnessed in some of these Islands.

eg - Island around Kerala have witnessed such events.

Causes behind the phenomenon

① Overdevelopment: To much Building of infrastructure exceeding the carrying capacity leads to sinking of Islands.

② Rising sea level: this is further exacerbated by the global warming and melting of glaciers.

③ Use of sanitary toilets: It leads to softening of soil, eventually leading to shifting of Islands.

④ Tectonic movements: Island originate and sink due to tectonic movement of earth's crust.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(5) Overuse of water : extraction of water makes the land fragile for subsidence.

Implications for community in Islands

1.1 migration : low lying land leads to rising sea and eventual migration of people.

1.2 Scarcity of freshwater : As sea water contaminates the freshwater springs.

1.3. Additional burden on women : To collect firewood away from home and to find freshwater.

1.4 Loss of forests for community as trees cannot develop in salt water.

1.5 Agriculture is affected by such subsidences.

1.6 Hazards of disasters : Landslides could happen threatening the lives of people.

Implication for Nation as a whole.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

① It can impact the important strategic plans for Indian purposes.

eg → ~~Case~~ Subsidence of Andaman and Nicobar can affect Indian activities in South China Sea.

② As a source of economic produce: eg → Coconut oil and electricity from wind energy is diminished.

③ Issue of human lives: constant migration can increase pressure of mainland souction.

④ Increasing sea water level can threaten the mainland India.

Sea island subsidence is a major problem for communities on ~~and~~ island and for India in general. Effective mapping of areas and zonation of area affected will help in regulating activities in threatened regions.

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15. भारत में संधारणीय पर्यटन के संबंध में क्षेत्र-विशिष्ट बाधाओं का एक समालोचनात्मक विवरण दीजिए।
Give a critical account of region-specific constraints with regard to sustainable tourism in India. (Answer in 250 words) 15

A. Sustainable tourism refers to the practices of tourism that are ~~bang~~ beneficial for the environment at the same time generate numerous socio ~~co~~ economic benefits for society.

India witnesses several constraints with ~~respect~~ respect to sustainable tourism:

1. In Himalayan region.

1.1 Low awareness among people: this is true for Northeast Himalayas where tribes such as Monpa, Nyishi reside.

1.2. Too much development: ~~to~~ such as hydropower structures have ~~lead~~ led to increased fragile Nature of the region.

1.3 Affect of tourists: Development of Roads and using personal vehicles contaminate the environment,

Don't write anything this margin (इस भाग में कुछ ना लिखें)

1.4. Economy of the region: Region is inhabited by low socio-economic background people that pushes people towards unsustainable practices.

2. Western India

2.1 Mostly landscape is arid: less opportunities for tourism.

2.2. Sparse population: low involvement of people in such initiatives.

3. Western and eastern ghats

2.1 unwillingness of tribals: due to experiences of violation of rights.
eg - Niyamgiri hills.

2.2 fragile land: leads to threat to tourism activities.

4. Islands of India

4.1 Indigenous tribes of Andaman and Nicobar oppose tourism.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

4.2 Lack of spending from budget: Since they come under centre's control, spending has not been aided by state's initiatives.

Measures to promote sustainable tourism

Measures
- ① Increased spending for initiatives.
- ② awareness among the people: involving local sections of regions.
- ③ Taking into account the separate contraints of regions case by case: i.e. No one size fits all approach.
- ④ Rights of Tribals must be ensured. eg- implementation of PESA
- ⑤ Development cost should not come at the cost of environment.

While sustainable tourism can lead to development of region and money for sources and exchequer, the concept of 'Sarvodaya' where development of all is taken into account should be maintained.

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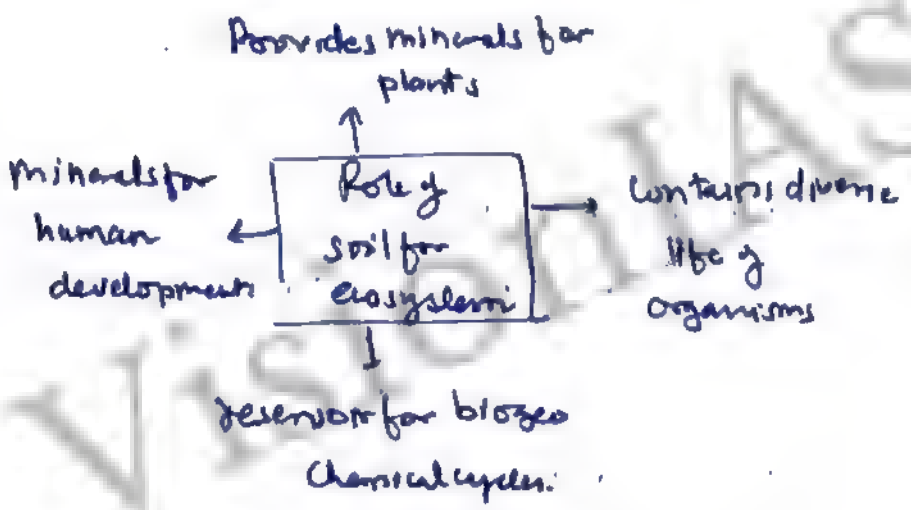
16. पारिस्थितिक तंत्र के लिए मृदा द्वारा निभाई गई महत्वपूर्ण भूमिका को ध्यान में रखते हुए, भारत में संधारणीय मृदा प्रबंधन के महत्व पर चर्चा कीजिए।
In view of the important role played by soil for the ecosystem, discuss the significance of sustainable soil management in India. (Answer in 250 words) 15

Sustainable soil management refers to the judicious use of soil that restricts soil erosion and maintains soil fertility for now and for coming generations.



Significance of sustainable soil development:

1.1 Ensures the mineral development from soil:
Sand is a minor minerals that is used for various construction purposes.

1.2 For conservation of diversity: Since soil provides nutrients to plants, any disturbances affect the

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diversity of the region.

1.3. Carbon emmision: Soil and particularly rocks act as reservoir of carbon and can lead to efficient maintainance of carbon cycle

1.4 Agriculture: low fertile soil affects Agriculture
eg - Barren land do not support vegetation

Challenges to sustainable soil management:

1. Deforestation: trees bind the soil and removal of trees lead to soil erosion.
2. Excessive irrigation leads to salinity.
3. Overdevelopment: And formation of concrete structures on soil.
4. Illegal sand mining: This leads to depletion of nutrient value of soil.
5. Climate change: Floods and droughts affect the erosion rate of soil.

Initiatives taken

1. Soil degradation or land degradation neutrality targets : to reduce degradation.
2. Green India mission to plant trees to reduce to reduce soil erosion.
3. United Nation convention against Desertification

Way forward

1. Strict implementation of laws against illegal mining.
2. Awareness among people about importance of soil.
3. Reducing deforestation : Deforestation reduction measures like green India mission should be implemented.
4. Sustainable Agriculture to reduce Saline soil.

Soil plays a crucial role in ecosystem. Thus including civil society and co-operation among nations should be the way forward for its conservation.

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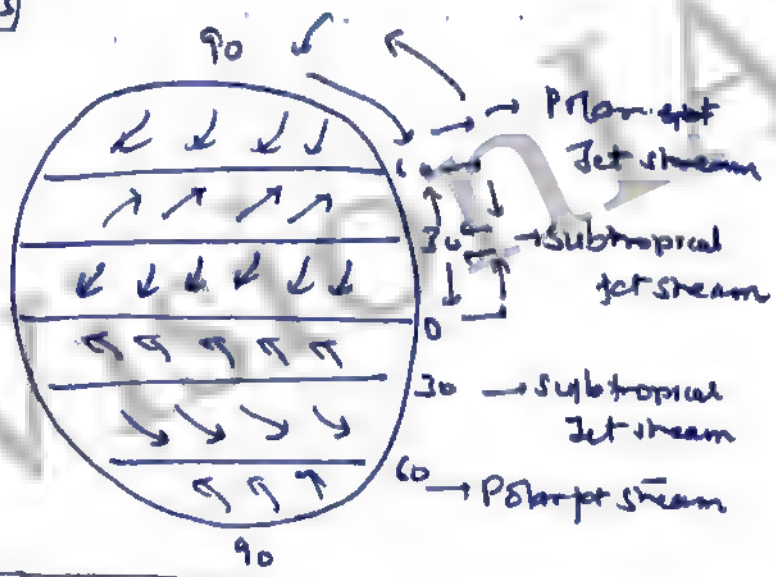
17. जेट धाराएं भारत और विश्व की जलवायु को बदलने में महत्वपूर्ण भूमिका निभाती हैं। उदाहरण सहित चर्चा कीजिए।
Jet streams play an important role in altering the climate of India and the world. Discuss with examples. (Answer in 250 words) 15

A. Jet streams are fast moving narrow flows of air that are present at in the upper Atmosphere. They are usually present at the junction of two climate cells.

Jet streams



Effect on world's climate

① Polar vortex : Polar vortex is contained by jet streams in the polar regions.
↳ any movement leads to low temperatures in lower latitudes.

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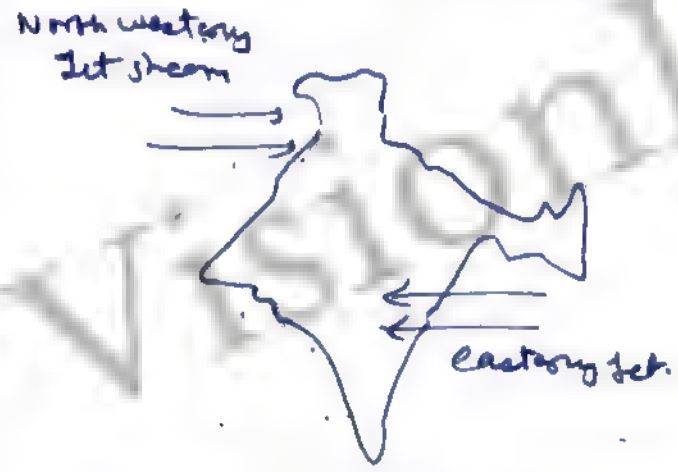
2. Climate and weather: Jet streams carry with them the cloud and associated phenomena and can lead to rainfalls.

3. Can drive the cyclones at their paths:

a → Medicanes in mediterranean ocean, driven by Jet streams.

Environment of India and affecting Jet stream



Effects on climate

① Jet streams bring rainfall in winter in North western regions of the country.

② The Northwesterly Jet stream is divided into two parts by Tibetan plateau

↳ After withdrawing lower part, monsoon

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(इस भाग में कुछ ना लिखें)

move towards India.

③ Tropical easterly Jet:

3.1 plays a crucial role in bringing monsoon.

3.2 Also drives cyclones to the India's coastal region.

④ Somalia Jet stream.

4.1 Affects the development of Indian monsoon and its movement towards India.

Jet streams thus are important movements of air that have widespread implications over the world and their understanding therefore is all the more important to tackle the anomalies of weather.

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18. भारत में मलिन बस्तियों के निर्माण और इसके प्रसार के लिए उत्तरदायी कारकों पर प्रकाश डालते हुए, प्रधान मंत्री आवास योजना के तहत इन-सीटू स्लम पुनर्विकास योजना में सुधार की आवश्यकता पर चर्चा कीजिए।

Highlighting the factors responsible for the formation and proliferation of slums in India, discuss the need to revamp the In-Situ Slum Redevelopment (ISSR) scheme under the Pradhan Mantri Awas Yojana (Urban). (Answer in 250 words) 15

A. Slums represent the poor quality households with poor water and health sanitation indicators, present in the cities of India.

Factors for formation and proliferation of slums in India.

① urbanization: Increasing urbanization and lack of housing in urban spaces leads to slum development.
→ 31% urban population (2011 census)

② Expensive housing rates: leading to exclusion of poor from good quality households.

③ Misgovernance by city municipal corporations is also a cause.
eg → unplanned growth

④ unrestricted migration due to lack of facilities in rural regions.

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(5) Informal sector economy functions in such slums owing to the lack of formal sector jobs for slum dwellers.

Need to revamp the Indian slum development scheme

① for effective implementation : has been unable to develop slums at an efficient rate up until now.

② for involvement of private sector by transparent means: their expertise and budget would be helpful.

③ Integrating the scheme with sustainable city goals: to ensure that schemes do not work in isolation.

④ To ensure that people are involved in redevelopment initiatives

⑤ To ensure basic health needs and issues of water sanitation is addressed along with the scheme.

⑥ Better involvement of states in the redevelopment.

To ensure the revamp, following measures should act as way forward:

Don't write anything this margin (for examiner's use only)

(1) Awareness generation among people about the importance of safe water and harms of proliferation of slums.

(2) Effective rehabilitation of people till slums are developed.

(3) Effective co-operation between centre and state to ensure implementation.

(4) Involving private sector in the endeavour through competitive pricing methods and PPP.

(5) Sustainable development goal of sustainable cities should be integrated with scheme.

These measures along with the convergence of schemes such AMRUT 2.0, Swachh Bharat Abhiyan and Awas Yojana would help in reducing the burden of slums of cities of India.

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19. भारत में निर्धनता और पर्यावरण क्षरण के बीच संबंध पर प्रकाश डालिए। निर्धनता में कमी करने से संबंधित प्रयास किस प्रकार सधारणीय विकास को बढ़ावा देने और पर्यावरण की सुरक्षा करने में महत्वपूर्ण भूमिका निभा सकते हैं?

Bring out the relationship between poverty and environmental degradation in India. How can poverty reduction efforts play an important role in promoting sustainable development and safeguarding the environment? (Answer in 250 words) 15

A. Poverty refers to lack of means to ensure minimum necessary living. Poverty is extricately linked to environmental degradation and therefore it is necessary that steps are taken to reduce poverty for sustainable development.

Relationship b/w poverty and environmental degradation

1. Collection of fuelwood: leads to deforestation by the below poverty line population.
2. Lack of awareness among poor people about the environmental impacts.
3. Use of fuelwood: leads to pollution and health effects on population.
4. Unsustainable use of water for irrigation of limited fragmented lands leads to depletion of groundwater.

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(5) Proliferation of slums: this leads to waste increase in urban areas, leading to fires and waste methane emissions.

Role of poverty reduction in sustainable development and safeguarding the environment:

(1) Better employment opportunities would reduce dependence on forests for economic development.

(2) Better fuel by schemes such as ujjawala yojana. → less pollution

(3) Sustainable canal irrigation: less drilling and extraction of underground water.

(4) Implementation of schemes like AWAS yojana would lead to better housing and reduction of waste.

(5) Awareness through education among people would lead to efficient people driven sustainable development measures.

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Way forward

- Educating people under poverty line
- provision of basic needs so that migration towards urban towns is reduced.
- Including civil society in efforts towards reduction of poverty.
- focus on empowering women ~~when~~ when tackling the poverty related issues to ensure gender equality.

focused implementation of schemes like NFSA, PM AWAS yojana and MANREGA are necessary to ensure that Poverty in India is reduced and India moves towards sustainable development goal 1 and 2.

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20. वैश्वीकरण और धर्म के बीच का संबंध जटिल रहा है, साथ ही दोनों के बीच की अंतःक्रिया के परिणामस्वरूप नई संभावनाएं और चुनौतियां उभर रही हैं। चर्चा कीजिए।
The relationship between globalisation and religion has been a complex one with new possibilities and challenges emerging as a result of the interaction between the two. Discuss. (Answer in 250 words) 15

Globalisation refers to increasing connectedness among Nations and societies. It has impacts on almost every Aspect of polity and society of Nation and religion is No exception.

Open borders
Interconnected economies
transportation means
→ Globalisation → flow of people, flow of capital, flow of ideas

Relationship between religion and globalisation:

1. Positive impacts of religion and globalisation relationship:

1.1 Better status of women: owing to global ideas of women equality.

↳ earlier women were granted low status in religious law books. eg – Manusmriti.

1.2. Reduction in Caste system of India: Religion

Don't write anything this margin (इस भाग में कुछ ना लिखें)

particularly Hinduism promoted caste distinction.

↳ Industries from globalisation have reduced this.

1.3. Promotion on international stage:

eg- Person living in India can explore Shintoism taoism etc.

1.4. Linking of religion to National and international goals.

eg- Recent movie oppenheimer mentions Gita and calls for denuclearisation of nuclear arsenals.

Negative impacts or challenges of this relationship

2.1 commercial spiritualism: Baba's use means of mass communication to spread lies.

2.2. Discrimination among religion: Increasing migration and resistance from native communities have acquired religious undertones.

eg- Islamophobia and Hindutvaphobia in western Nations.

2.3 class discrimination: caste discrimination by religious scriptures has transformed to class discrimination.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

2.4 ultranationalism and its justification by religion.

eg → Shintoism was used by Japan to justify its attacks on china in 1937.

Similar issues of Islamic fundamentalism are seen today.

For effective and positive relationship between the two, it has to be understood that basic features of all the religions are same and globalisation can help in their spread for peace and brotherhood among ~~sect~~ countries.

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GENERAL STUDIES (TEST CODE : 2091)

Name of Candidate	NIKHIL SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	1157317
Center	ONLINE	Date	04/09/2023

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	Strongly Recommended

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

VisionIAS

All the Best

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(इस भाग में कुछ ना लिखें)

1. भारतीय कृषि में जल के अकुशल उपयोग के लिए उत्तरदायी कारण क्या हैं? जल उपयोग दक्षता में सुधार के उपाय सुझाइए। (150 शब्दों में उत्तर दीजिए) 10

What are the reasons behind the inefficient use of water in Indian agriculture? Suggest measures to improve water use efficiency. (Answer in 150 words) 10

Water use efficiency refers to the effectiveness of water that is applied to crops to increase yield of crops and productivity of land.

Efficiency of water remains less than the world's average.

Reasons behind low efficiency

-i- Flood irrigation as the major way of irrigation
↳ leads to wastage of water and water logging (increasing salinity)

-ii- Dependence on monsoon
↳ 52% rainfed Agriculture, 48% irrigated.

-iii- Water intensive crops such as sugarcane and rice in water deficient regions such as punjab.
↳ 25% land area under rice cultivation in India.

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-iv- high cost of modern irrigation systems
(70% cost related to irrigation)

-v- land fragmentation (1.08 hectare average farm size)
↳ low mechanisation

Measures to increase water use efficiency

-i- micro irrigation practices
↳ such as drip irrigation, sprinkler irrigation etc.

-ii- incentives by government to reduce upfront costs of irrigation systems

-iii- Sustainable Agriculture practices
↳ such as zero ~~no~~ ~~till~~ mulching to save farmland moisture.

-iv- water efficient crops such as millets in drought prone regions.

Schemes of government such as watershed development programmes should be implemented for increased productivity of Agriculture.

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2. भारत में सार्वजनिक वितरण प्रणाली (PDS) के तहत फूड बास्केट में विविधता लाने के सामाजिक, आर्थिक और पर्यावरणीय लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10

What are the social, economic and environmental benefits of diversifying the food basket under the Public Distribution System (PDS) in India? (Answer in 150 words) 10

Public distribution system in India refers to provision of food through fair price shops under the National food security Act and Antodaya anna yojana.

Diversification of food basket Public distribution

It refers to increasing of choices of food under the scheme including pulses, millets, fruits and so on.

Why → Since PDS have been focused on cereals like wheat and rice since inception.

→ This has led to skewed Agricultural production in favour of cereals.

Benefits of diversification

-i- Social

(a) Better nutrition uptake: to reduce hunger

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and micronutrient deficiencies.

(b) Better calorie uptake

-ii- Economic benefits.

(a) Removing the pressure on cereals, thus reducing the food subsidy bill of India

(b) Better remuneration for farmers of millets, fruits and soon.

(c) Saving on electricity subsidy by reducing of water usage by drought resistance crops

-iii- Environmental benefits

(a) Reduced fertilizers and pesticides use

(b) Reduced groundwater uptake and contamination

(c) Reduced instances of stubble burning due to shift from rice cultivation

In the long term shifting to DBT (Direct Benefit transfer) can enhance benefits for India.

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3. क्या पशुधन क्षेत्रक को पुनः सक्रिय करना भारत के किसानों की संधारणीय आजीविका और आय में वृद्धि सुनिश्चित करने करने की कुंजी हो सकता है? अपने उत्तर के समर्थन में कारण प्रस्तुत कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Can re-energising the livestock sector be the key to sustainable livelihood and increasing the income of Indian farmers? Give reasons in support of your answer. (Answer in 150 words) 10

Livestock sector contributes 30% to Agricultural GVA and has a 7.9% capital annual growth rate (CAGR).

Re-energising : need

- lack of marketing chains.
- lack of veterinary doctors.
- diseases disturbing producing
- low productivity of livestock despite high population.

Role that livestock sector can play in sustainable livelihood and increasing income of farmers

-i- Off season income → to reduce the underemployment in farming sector and provide new avenues.

-ii- Increasing demand due to growing urban population: opportunity for farmers for additional income.

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(इस भाग में कुछ ना लिखें)

iii - nutrients to the family of farmers and to the supply chain
↳ to reduce the issues of hunger.

-iv- ~~Do~~ Resistant varities of India when crossed with ~~exog~~ exotic varities can provide higher yield to farmers

-v. It can also provide avenues for empowerment of women (due to increased farm mechanisation)

-vi- high co-operative farming potential of sector eg- AMUL

step taken
- GAKUL mission
- National livestock mission
- Schemes for addressing FMD and Brucellosis

Strict implementation of schemes and promoting co-operative farming can go a long way in increasing the productivity of farm sector through livestock.

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4. क्या आप इस बात से सहमत हैं कि आर्थिक सुधार के बाद की अवधि में उच्च आर्थिक संवृद्धि के परिणामस्वरूप संवृद्धि का लाभ हाशिए पर मौजूद वर्गों तक नहीं पहुंच पाया है, जिससे समावेशी विकास चिंता का एक प्रमुख विषय बन गया है? अपने उत्तर का औचित्य सिद्ध कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Do you agree that high economic growth in the post-reform period has not resulted in growth trickling down to the marginalised sections, rendering inclusive growth a major concern? Justify your answer. (Answer in 150 words) 10

Trickle down theory refers to the idea that high economic growth will automatically results in reduced poverty and increased benefits to marginalised sections.

Positive role that economic growth played in post Reform period for inclusive growth:

-i- Reduction in poverty: Indian poverty in recent times have reduced from 22.5% to 10.2% (12.3% decrease) (World Bank).

-ii- Increased opportunities for skilled personnel: through development of ~~skill sector~~ service sector (34% employment).

-iii- Better services of Health and education e.g. Telemedicine and applications such as e-ex ~~through~~ for education

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-iv- Increased opportunities for farm sector
↳ through increasing mechanization and global supply chains

-v- Better Banking penetration (14.7 per 100,000)

Issues with this development

-i- Inequality: top 10% hold 77% of the income (oxfam) report.

-ii- Shift from Agricultural dominant to service dominant economy
↳ (~~leading~~ leaving the labour intensive manufacturing sector at 17% contribution to GDP)

-iii- Increasing hunger (107/121 in Global hunger index).

-iv- ~~Ma~~ Majority of benefits of farm sector covered by large farmers.

To ensure equal and inclusive growth agriculture sector has to be remunerative. Further growth that increases employment should be the way forward.

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5. राष्ट्रीय स्वच्छ वायु कार्यक्रम (NCAP) के परिणाम का मूल्यांकन कीजिए। मिशन LiFE वायु प्रदूषण के मुद्दे का समाधान करने में NCAP को कैसे पुनर्जीवित कर सकता है? (150 शब्दों में उत्तर दीजिए) 10

Evaluate the outcome of the National Clean Air Programme (NCAP). How can Mission LiFE reinvigorate the NCAP in addressing the issue of air pollution? (Answer in 150 words) 10

National clean Air ~~pro~~ program was launched in 2019 to reduce pollution and increase the air quality of targeted cities.

Positive outcomes of the mission

-i- Establishment of monitoring centres for air quality in cities.

-ii- Reduction in Particulate matter concentrations in cities

-iii- Awareness among citizens regarding harmful effects of pollution.

-iv- Better governance measures to decrease pollution from industries and chimnies

Issues

-i- India 8th highest polluted countries (IQ Air).

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-ii - National capital region is the 2nd most polluted capital city (IQAir)

-iii - Pollution through transport and vehicles still a cause of concern

[Mission LiFE]

refers to Life style for Environment.

↳ Life style changes that take into account the impact that it would have to nature

MISSION LiFE CAN HELP NCAP through

- → reduced wastage (circular economy concept)
- → increased public transport usage
- → Awareness among citizens about their impact on environment.
- → Reducing the emission of GHGs as well as particulate matter in environment

Mission Life aims to integrate positive lifestyle for addressing the issues of pollution and climate change. Successful implementation can manage the issue of intergenerational equity.

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6. पारिस्थितिक तंत्र पर वनाग्नि के प्रभाव की विवेचना कीजिए। वनाग्नि के खतरे से निपटने में UNEP के फायर रेडी फॉर्मूला के महत्त्व का वर्णन कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Discuss the impact of wildfires on the ecosystem. Describe the significance of the UNEP's Fire Ready Formula in dealing with the menace of wildfires. (Answer in 150 words) 10

Wildfires in recent times such as Hawai wildfires have increased, impacting ecosystem, human life, as well environment.

According to Indian state of forest report 2021, 38% of India's forests are prone to wildfires.

Impact of wildfires on ecosystem

- Positive impact

-i- Rejuvination of the vegetation through removal of weeds and parasitic organisms.

-ii- Increased fertility of soil through humus generation.

-iii- Creation of ecotones for increased diversity

Negetive influence

-i- Destruction of flora as well as fauna from forests.

eg- Koala in Australia threatened with

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extinction after wildfires.

-ii- Pollution in environment through to smoke and particulate matter.

-iii- Increased GHG emmissions, increasing global warming (Positive feedback).

Significance of UNEPs fire ready formula

It aims to reduce the impact of wildfires in the ~~commun~~ communities and to the ecosystems.

Significance
- important role of native communities in stopping wildfire
- Fire lines in the forest to stop wildfires.
- awareness among people regarding causes of wildfires.
- capacity building of fire departments and local populace

Wildfire in recent time have grown out of hand and require the cooperation of international domain to deal with the problem.

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7. हाल ही में, भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने लघु उपग्रह प्रक्षेपण यान (SSLV) नामक अपना नया रॉकेट प्रक्षेपित किया। इसके क्या लाभ हैं? आने वाले वर्षों में SSLVs इसरो के लिए कैसे गेम चेंजर सिद्ध हो सकते हैं? (150 शब्दों में उत्तर दीजिए) 10

Recently, the Indian Space Research Organization (ISRO) launched its new rocket called Small Satellite Launch Vehicle (SSLV). What are its advantages? How can SSLVs be a game changer for ISRO in the years to come? (Answer in 150 words) 10

SSLV (Small Satellite launch vehicle) is the vehicle for launching small payloads in the Low earth orbit (LEO)

It is a three stage launch vehicle.

→ All solid stages are present in SSLV.

Advantages of SSLV

- i - Low assembly time to few hours (72-96) from days and months taken for larger launch vehicles.
- ii - Low cost; making it affordable for small satellite missions
- iii - Portable and can be assembled and transported according to need.

SSLV as game changer

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-i- It can be attractive for private sector to launch satellites
↳ owing to low costs and portability.

-ii- Co-operation with international communities
↳ eg → Singapore has been collaborating with India for launching satellites

-iii- Increasing entrepreneurship possibilities
↳ increasing employment opportunities

-iv- Can be used as a specialised vehicle for small missions
↳ while the PSLV and GSLV can be used for interplanetary missions

To increase its benefits implementation of Indian Space policy in spirit can be the ideal way forward.

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8. बायोपाइरेसी विकासशील विश्व के मौजूदा पारंपरिक ज्ञान के लिए प्रमुख चिंता का कारण क्यों है? भारत सरकार द्वारा मौजूदा पारंपरिक भारतीय ज्ञान की सुरक्षा के लिए क्या कदम उठाए गए हैं? (150 शब्दों में उत्तर दीजिए) 10

Why is biopiracy a cause of great concern to the existing traditional knowledge of the developing world? What steps have been taken by the government of India for protecting the existing traditional Indian knowledge? (Answer in 150 words) 10

Biopiracy refers to unlicensed use of traditional intellectual property for commercial usage.

~~Pati~~ Patent for usage of turmeric was one example of biopiracy for India.

Biopiracy as a concern

-i- Can deprive local communities of the ~~bend~~ benefits of the commercialization

-ii- Exploitation of traditional formula.
eg - Basmati patent.

-iii- unsustainable use affecting the ecosystem as well as communities

-iv- forming neo-colonialism
↳ as countries such as Africa are deficient in technology to force such violations.

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Steps taken by India to protect traditional knowledge

-i- Traditional knowledge digital library
: to catalogue all the available formulations on internet.

-ii- Signing of Convention on biodiversity.
↳ It emphasises the fair use and sustainable benefits of resources.

-iii- Protection of plant varities Act, 2001
↳ to protect exploitation of farmers and protects them

-iv- Environment protection Act, 1986 → to protect exploitation of environment.

To further increase the protection, collaboration with international community and increasing awareness among local population is the ideal way forward.

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

9. असम राइफल्स को पूर्वोत्तर भारत में सीमा प्रबंधन और उग्रवाद से निपटने में किन चुनौतियो का सामना करना पड़ता है? चर्चा कीजिए कि कैसे इन चुनौतियों के समाधान हेतु इस बल के फोकस में बदलाव की आवश्यकता है। (150 शब्दों में उत्तर दीजिए) 10

What are the challenges faced by the Assam Rifles with regard to border management and tackling of insurgency in North-East India? Discuss how these challenges require a reorientation of the force. (Answer in 150 words) 10

Assam rifles are part of central Armed police forces that guard the Indian border at Indo-Myanmar junction.

Challenges faced by Assam rifles

-i- Difficult terrain of the region, makes it difficult to work in face of N-E insurgency.

-ii- guerilla warfare by insurgents harm the personnel.
↳ as they are not often adapted to such ~~wart~~ warfares.

-iii- Cross border movements of people in the border areas make it difficult to identify the ~~people~~ insurgents, immigrants and local population

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-iv-
→ Cross border narcotics trade in the region due to ~~prox~~ proximity to golden triangle
↳ makes it more difficult to stop financing of insurgents.

Way forward: Reorientation of workforce

-i- Tech-savvy force can help deal with difficult terrain and guerilla warfare
↳ eg → concept of smart border, night vision etc.

-ii- Development part of the force should be emphasised
↳ to increase the trust of the people.

-iii- Co-ordination with local police as well as central forces would help in tackling of Narcotic and ~~co~~ immigration challenges.

ASSAM rifles could be reoriented towards accountability and proportionate use of force to address the insurgency issue.

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10. अंतरिक्ष में शस्त्र स्थापित करने की होड़ अंतरिक्ष को शस्त्रों के संघर्ष का अगला युद्ध क्षेत्र बनाते हुए जल्द ही उस सीमा को पार कर सकती है जहां से वापस लौटना संभव नहीं होगा। अंतरिक्ष के शस्त्रीकरण के लिए उत्तरदायी संभावित कारण क्या हैं? इसके निहितार्थों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10

The race to put weapons in space may soon pass the point of no return making space the next theatre of arms struggle. What are the possible reasons behind the weaponization of space? Discuss its implications. (Answer in 150 words) 10

Space weaponization such as Shakti test by India display the manifestations of space capabilities of nations and can have the negative ~~implica~~ implications for world peace.

Reasons Behind weaponization of space

-i- Increasing Research and development in space domain has made it possible to send weapons to space.

↳ increasing ~~ex~~ defence expenditures

-ii- Arms race among world's major powers and demonstration of hard power by the Nations.

-iii- Concept of deterrence gaining new meaning as land, water and air capabilities are present with every country.

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-iv- Increasing global tensions

eg- Russia ukraine war, US-china brinkmanship and soon.

Implications of space weaponization

-i- threat of Kessler's syndrome.

↳ destroying the navigation and other good purpose satellites

-ii- further increasing weaponisation as countries will try to reduce the possible gap in preparation against adversaries.

-iii- Nuclear threat from space

↳ if nuclear weapons are sent.

-iv- complete reversal of peace established after cold war, due to arms race

-v- spending on defence would increase, affecting social causes.

To reduce this phenomenon, international negotiations and modification of outer space treaty is the need of the hour.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

11. हाल ही में, जवाहरलाल नेहरू पत्तन (JNP) भारत का पहला 100% लैंडलॉर्ड पोर्ट बन गया है। लैंडलॉर्ड पोर्ट मॉडल से आप क्या समझते हैं? पत्तनों के प्रबंधन में प्रयुक्त विभिन्न मॉडल कौन-से हैं? (250 शब्दों में उत्तर दीजिए) 15

Jawaharlal Nehru Port (JNP) recently became the first 100% Landlord Port of India. What do you understand by the Landlord Port model? What are the different models employed in the management of ports? (Answer in 250 words) 15

Jawaharlal Nehru Port (JNP) is located on the Arabian ~~city~~ sea cost and handles ~~to~~ large amount of cargos from Northern and Western Indian hinter land.

It has been managed under the Landlord port model.

[Landlord port model]

- Landlord port model refers to the ownership by government of the the port.
- However all the operations are carried out by the private sector
- It ~~enable~~ enables Flexibility, better governance and investment in the port model.

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(Other models for the development of ports.)

-i- Private sector ports: these ports are owned as well as operated by private sector.

=> usually minor ports are regulated under this.

=> Better services such as low turnaround time

=> However higher costs as deterrent.

-ii- Public sector ports: These are owned and operated by public sector.

=> Often major ports are involved.

=> recognized by bureaucratic hurdles and red tappity.

=> high turn around times.

-iii- Public private partnership: Involves involvement of both public and private sector under different arrangements

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Such as –

(a) ↳ BOT → Build operate and transfer – private sector ~~Build~~ Builds and transfers the project to public sector.

(b) ↳ lease model: Public sector entities provides project on lease to private sector.

↳ private sector pays defined amount to owner.

(c) Landlord is also one of the types of involving public sector and private sector together.

~~The~~ Landlord port model is therefore one of the model of port management. It enhances efficiency and ensures accountability and has been in use ~~for~~ in ~~recent~~ recent times.

Don't wr anything margin (इस भाग कुछ ना लिख

12. भारत में कृषि मशीनीकरण को बढ़ावा देने के लिए शुरू की गई कृषि मशीनीकरण पर उप-मिशन (SMAM)) योजना के प्रदर्शन का विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Analyse the performance of the Sub-Mission on Agricultural Mechanization (SMAM) scheme launched to promote farm mechanization in India. (Answer in 250 words) 15

Sub mission on farm mechanisation aims to increase the adoption of mechanisation in farming sector.

Mechanisation in farming sector stands at 40-45% in India.

Achievement of SMAM

- i - Provision of new technologies such as tractors, seeders to farmers
- ii - Increased productivity of farms through the use of these technologies.
- iii - Involvement of private sector in providing the technologies to sector
- iv - focus on the co-operative farming

Don't write anything this margin (इस भाग में कुछ ना लिखें)

has increased mechanization of farm sector.

-v- Monitoring of mission by government has led to better outcomes by plugging the issues and gaps

Challenges that are present

-i- farm mechanization still remains low: 40-45% is paltry when compared to ~~to~~ 95% in US and 55% in China.

-ii- Remunerative farm holdings goal of have not been achieved despite implementation of mechanisation, owing to

(a) Land fragmentation (1.08 hectare average farm size)

(b) Lack of penetration of cooperative farms (mostly concentrated in western India)

-iii- Awareness among farmers regarding the mission ~~is~~ has been low

↳ leading to low utilization of Benefits.

Way forward

-i- Awareness generation should be the major aim of scheme.

↳ through Panchayats and farmer producer organizations

-ii- Leasing based model of mechanization should be followed to reduce the cost prohibition

↳ Community centres for leasing in Madhya Pradesh for example.

-iii- Increasing the pooling of land through clear titling, and cooperative farming

Though the scheme promises mechanisation, revamping the scheme with focus on dovetailing the farmer support through FPO and civil society can help in achievement of goals of mechanization.

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

13. खाद्य प्रसंस्करण क्षेत्रक की अप्रयुक्त क्षमता का दोहन करने और इसके सामने आने वाली चुनौतियों का समाधान करने में डिजिटलीकरण की क्षमता पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Discuss the potential of digitization in harnessing the untapped potential of the food processing sector and resolving the challenges that it faces. (Answer in 250 words) 15

Food processing sector refers to the processing of raw food to add value and increase shelf life.

It contributes 1.69% to the GVA of the country.

Potential of food processing sector

-i- Reducing the foodwastage
↳ to the tune of 92000 crore in India

-ii- Large farm bases in India
↳ number one producer of cereal pulses and millets

-iii- Providing employment to the skilled as well as unskilled youth

-iii- ~~Catering~~ catering to the demand of nutritious and healthy food (107/121 in Global hunger index)

Challenges that food processing sector faces.

-i- Informal sector dominates the sector

↳ about 70% of food processing enterprise are informal

-ii- weak linkages to the farmers and to the market

-iii- Lack of skilled workforce in India

-iv- ~~Bur~~ Bureaucratic hurdles in land allotment and getting the permissions required, i.e red tapping.

-v- Lack of connection to the export markets.
↳ despite being present at a crucial junction to western and eastern market.

-vi- Lack of cold storage facilities
↳ 30-40 lakh tonnes shortage (Palwai committee)

Role of Digitisation in solving challenges and tapping potential.

-i- transparent allotment of clearances and
↳ through single window portals

Don't write anything this margin (इस भाग में कुछ ना लिखें)

-ii- ~~Connect~~ connecting to the farmers creating backward linkages
↳ through programmes such as ~~and~~
.. e-NAM

-iii- ~~Better~~ estimation of demand in the market through ~~monitor~~ digitized monitoring.

-iv- Reducing food wastage through e-negotiable warehousing receipt system
↳ and monitoring of food storage godowns.

-v- Better estimation of demand of skilled workforce and connecting of Industry with ~~academia~~ academia

To utilise this potential increased push for Research and development spending as well as increasing digital penetration among rural areas is the need of the hour.

Don't write anything in margin (इस भाग में कुछ ना लिखें)

14. भारत में भू-अभिलेखों के आधुनिकीकरण का क्या महत्व है? इस आलोक में राष्ट्रीय जेनेरिक दस्तावेज पंजीकरण प्रणाली (NGDRS) की विशेषताओं का वर्णन कीजिए। (250 शब्दों में उत्तर दीजिए) 15

What is the significance of land record modernization in India? In this light, state the features of the National Generic Document Registration System (NGDRS). (Answer in 250 words) 15

Land records modernization refers to reinterpretation and digitising of land ~~land~~ records to establish conclusive titling and mapping of lands in India.

Land Records modernization → Steps
- Survey
- ↓ establishment of ownership of land
- ↓ Digital certificate
- ↓ Conclusive titling

Significance of land record modernization program

- i- To reduce the litigations in lower courts
  - ↳ about 2/3 of the litigations in lower courts are about land records.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

-ii- Better collateral certificates for farmers to provide for loans
↳ so that formal sector lending can increase beyond 70%

-iii- easily land leasing and increasing the concept of co-operative farming

iv - Reduce property frauds
↳ Through conclusive titling of lands.

-v- Increase farm mechanization in the long term from current 40-45%.

Steps taken by India → Digital land records modernization program
↓ Bhuvan map.
↓ SWAMITVA

National generic Document Registration system

Features.-

-i- The system provides for registration of documents related to land

Don't write anything in this margin (इस भाग में कुछ ना लिखें)

-ii- provides a certificate and identification number to the documents.

-iii- aims to ease the digitising of documents for ~~last~~ hassle free access to documents

-iv- works through gram panchayats and district blocks.

-v- improves governance related to land through easier mapping of village lands.

Land record modernization is a necessity for increasing investment in farming sector to increase the income of farmers and revolutionise the land governance in India.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

15. 'प्रधान मंत्री फसल बीमा योजना' की शुरुआत से ही प्रौद्योगिकी के उपयोग ने इसकी सफलता में महत्वपूर्ण भूमिका निभाई है। चर्चा कीजिए। इस योजना को अधिक किसान-अनुकूल बनाने के लिए और क्या बदलाव किए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15

The use of technology has played a key role in the success of the 'Pradhan Mantri Fasal Bima Yojana' since its inception. Discuss. What further changes can be incorporated to make the scheme more farmer-friendly? (Answer in 250 words) 15

Pradhan Mantri Fasal Bima yojna is the insurance oriented scheme of central government to protect farmers against crop losses and increase investment in farm sector.

PMFBY → Premium paid by farmers and by government.
Both for Kharif and Rabi as well as Horticultural crops
Covers post harvest losses such as hailstorms, cyclones etc.
have a key role for technology

The role that technology has played in its success :

-i- technology has enabled the farmers to know about premiums that they have to

pay.

-ii- Monitoring of the program by government on whether the insurance company has provided the insurance or reimbursement

-iii- Monitoring of the crops sown in the season, for better supply estimations

-iv- It has helped connect farmers to government as well as ~~farmers~~ insurance companies online

-v- has increased investment in farming sector, as risks have been reduced

-vi- Provided inputs on crops to sow by monitoring the soil quality.

Further changes can be made to make scheme farmer friendly.

-i- Grievance redressal portal for farmers

Don't write anything this margin (इस भाग में कुछ ना लिखें)

can go a long way in tackling the inequities and issues that they face

-ii- Adding the weather related warning to the schemes can help farmers manage their produce
↳ to reduce wastage

-iii- faster processing of insurance claims
↳ by insurance ~~co~~ companies
↳ also ~~faster pro~~

-iv - faster provision of premiums by state governments
↳ Often premiums are delayed by state governments.

Pradhan Mantri Fasal Bima yojana caters to the needs of farmers. To reap benefits out of such schemes due taking of food processing schemes with PMFBY can increase remuneration of farmers.

VisionIAS

16. चर्चा कीजिए कि कैसे नवीकरणीय ऊर्जा की ओर ट्रांजिशन भारत में महिलाओं के जीवन को बदलने और उनकी पूर्ण क्षमता को उजागर करने का सामर्थ्य रखता है। (250 शब्दों में उत्तर दीजिए) 15

Discuss how the transition towards renewable energy has the potential to transform the lives of women in India and unlock their potential. (Answer in 250 words) 15

Renewable energy including the solar, hydro-power and biogas has been the prime target of India to fulfill the 2070 decarbonisation target. In this regard, adoption of renewable energy also alleviates the concerns of women in India.

Potential of renewable energy to transform the lives of women in India

-i- Reducing the burden of collecting fuel wood on women
↳ by provisions of solar cookers and ~~solar~~ bio energy.

-ii- They also help in reducing the indoor pollution caused by wood fuel

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↳ women are mainly affected by such pollution

-iii- Increased energy in farm sector through schemes such as PM-KUSUM

↳ This would increased water availability and increased yield for farms managed by women (Bus. of all economically active women in ~~fam~~ farm ~~sector~~ sector)

-iv- Increasing employment opportunities can be a potential ~~to~~ game changer for women.

-v- Use of Biogas for energy would help in recognition of their contribution to livestock sector.

Challenges.

-i- Cost of solar energy plants and technologies are prohibitive

↳ major challenge in PM-KUSUM Adoption

Don't write anything in margin (कुछ भाग कुछ का हिस्

-ii- lack of skills among women to utilise the opportunities of employment.

-iii- Lack of awareness in the rural areas
↳ about the benefits of renewable technologies.

Way forward

- ↳ Increasing skill oriented training for women
- ↳ incentivising the utilisation of renewable energy
  - ↳ to reduce cost factor.
- ↳ Increasing awareness among rural areas about benefits.
- ↳ Monitoring of Adaptation of renewable energy.

Q.To decarbonization target can act as a ~~cost~~ opportunity to reduce the women discrimination and achieve the sustainable development goals of climate action and gender equity.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

17. जलवायु परिवर्तन भारत द्वारा भुखमरी और कुपोषण दूर करने में सामना की जाने वाली चुनौतियों में कैसे वृद्धि कर रहा है? 2030 तक शून्य भुखमरी प्राप्त करने की भारत की प्रतिबद्धता के सदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

How does climate change exacerbate the challenges that India faces in eliminating hunger and malnutrition? Discuss in the context of India's commitment to achieve zero hunger by 2030. (Answer in 250 words) 15

Sustainable development goal ① aims to remove hunger and achieve hunger free society.

The progress towards this goal though positive have been marred by issues of climate change.

India's committment to achive zero hunger by 2030 :. Steps taken

- i - POSHAN Abhiyan → to reduce malnourishment
- ii - POSHAN Anganwadis → for infants and children below 1-3 years.
- iii - NFSA (National food security Act)
  ↳ for poor
  ↳ coupled with Antodaya Anna yojana.
- iv - ONE NATION ONE RATION CARD

Despite these schems India ranks 107/121 in Global hunger Index.

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Role of Climate change in exacerbating the issues of hunger and malnutrition

-i- ~~Dec~~ Decreased productivity of crops
↳ due to increased temperatures.

-ii- climate induced migrations ; due to disaster and extreme weather events
↳ about 80% of all climate induced migrants are women.

-iii- extreme weather events also lead to closure of schools and hospitals
eg - floods and droughts
↳ interrupting targeted programmes such as ICDS.

iv- Increasing chances of pandemics such as COVID-19 → by increasing temperatures and moisture
↳ Poor and hungry people bear disproportionate impact of such pandemics

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[Way forward]

-i- Focused intervention on implementation of schemes such as POSHAN Abhiyan and ICDS

-ii- growing of heat resistant and disease tolerant crops.
eg - millets. (SHREE ANNA yojana)

-iii- Addressing the climate related migration by formulation of guidelines.

-iv- Mapping and forecasting of extreme weather events
↳ to better prepare against such issues.

The measures to stop hunger are at our fingertips. Concerted attempts by whole of society approach can reduce this ~~unne~~ ~~unne~~ ~~be~~ unnecessary suffering.

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

18. डिजिटल ट्विन प्रौद्योगिकी से आप क्या समझते हैं? इसे अपनाने के लाभ और चुनौतियां क्या हैं? (250 शब्दों में उत्तर दीजिए) 15

What do you understand by digital twin technology? What are the benefits and challenges in its adoption? (Answer in 250 words) 15

Digital twin technology refers to the creation of digital replicas of places, things and places, for better planning and implementation of ~~schemes~~ schemes.

Digital twin technology

It involves → scanning of the places and cities through satellite applications
→ creation of digital map.
→ use of this map for better uses of planning.

Benefits of Digital twin technology

-i- ~~Plan~~ Planning of schemes can be much better through digital implementation,

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checking the loopholes, re designing the schemes.

-ii- formation of disaster resilient infrastructure ~~through~~ ↳ by utilising the terrain information

-iii- Better traffic control
↳ By looking at black spots, reduction in accidents ~~and~~ can be achieved.

-iv- Architectural designs that could include Blue green spaces and earthquake resistant structures.

-v- Monitoring of scheme implementations. With housing sector and slum redevelopment.

Challenges.

-i- Advanced technology
↳ only few of the corporates provide this technology
↳ Skills among personnel less developed due to Advanced nature.

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-ii- Privacy issues that can spiral out of control
↳ as every house can be digitally created.

-iii- Putting the plan to implementation requires more than just digital twin technology
↳ better coordination ~~among~~ among departments and so on.

Way forward

↳ Capacity Building in government departments for digital twin technology
↳ Skill development.

↳ Addressing privacy issues through Adoption of technologies such as ~~Blocke~~ Blockchain.

↳ Co-ordination among the departments for smooth planning.

finding out the loopholes that exist in implementation and creation of digital twins and addressing them in timebound manner can help in using this tech.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

19. आतंकवाद के वित्तपोषण पर अंकुश लगाने हेतु किए गए अनेक प्रयासों के बावजूद अतर्राष्ट्रीय समुदाय के लिए यह एक मुख्य चुनौती बना हुआ है। चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Terrorism financing continues to remain a major challenge for the international community despite several efforts to curb it. Discuss. (Answer in 250 words) 15

Terrorism financing in 21st century refers to ways and means by which terrorist collect money for their operations. It includes fake currencies narcotic trade, ransoms etc.

[Steps/efforts to contain terrorism financing]

-i- National laws → eg- Preventing money laundering Act, 2002 (PMLA) is the major act by Indian government to stop terrorist financing.

-ii- International bodies for collaboration
eg- FATF (financial Action task force) and ~~Interpol~~. INTERPOL

-iii- Strict guidelines on airports for narcotics trade.

-iv- Security Features in notes and currencies

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to reduce the instances of fake currencies.

-v- efforts by UNSC (United Nations security Council) to designate terrorists through sanctions committees.
↳ to freeze their assets

Challenges that ~~remai~~ remain in addressing the issue

-i- emergence of crypto currencies → provide anonymity and privacy for illegal Act.

-ii- Weak implementation
↳ FATF grey and black list have often been politically motivated rather than by genuine problems.

-iii- Lack of bilateral collaborations
↳ to eliminate the criminals involved in terrorist financing.

-iv- Increasing use of Internet has increased Dark net users and online narcotics trade

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-v- traditional measures such as HAWALA methods are also ~~used~~. used.

Way forward

-i- Switching to digital currencies:
↳ to reduce counterfeit currencies.

-ii- International collaboration for extradition the terrorists.

-iii- better implementation and ~~binding~~ binding declarations through bodies such as FATF

-iv- Rising above the narrow political gains in UNSC like multilateral bodies.

-v- ~~Fo~~ Better implementation of KYC guidelines to reduce HAWALA routes.

~~fo~~ open borders and globalized world make it easier for terrorists to collect ~~finan~~ finance. only collective will to eliminate the scourge can help in dealing with the issue

Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. कृत्रिम बुद्धिमत्ता (AI) में होने वाली प्रगति से राष्ट्रीय सुरक्षा के दृष्टिकोण से अवसरों के साथ-साथ चुनौतियों में भी वृद्धि होगी। भारत के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15

Advances in artificial intelligence (AI) will progressively multiply the opportunities as well as challenges from the national security perspective. Discuss in the context of India. (Answer in 250 words) 15

Artificial intelligence refers to thinking capabilities like humans in machines. Manifestations include CHAT GPT, BARD, DALL-E etc.

Artificial intelligence can have a security angle too, given the technology that it provides.

Opportunities for National security

-i- Better training of military teams through Artificial intelligence coupled virtual reality systems

-ii- Analysing the security threats by using machine learning
eg → feeding in the data about cyber attack can give patterns and solution invisible to human eye

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-iii- Increased deterrence if better AI powered system are at place in cyber security

-iv- offensive capabilities through AI powered drones and machines

-v- AI powered designing of terrains can help in better border monitoring

Challenges from AI to National security

-i- Sophisticated cyber attacks
↳ that can exploit the 'zero' day vulnerability.

-ii- terrorists can use the mapping of terrain by AI to target cities

-iii- AI powered drones and offensive technologies can be biased and will lack the burden of crime
↳ as the machine would commit the crime.

-iv- International conventions lack the rules and

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regulations for AI powered offensive capabilities.

[Way forward]

-i- Adoption of Budapest convention can help in addressing the digital technology related issues to National security.

-ii- Better training of teams of CERT-IN to tackle AI related challenges.

-iii- guidelines for Data protection to protect from ransom ware attacks driven by AI violations of GDPR.

-iv- Evolving ~~new~~ international laws and Convention to regulate the use of AI technology

AI is often considered as double edged sword. Effective ~~any~~ formulation and implementation of regulation ~~can~~ can help in utilisation of opportunities.

VISIONIAS
INSPIRING INNOVATION

ABHYAAS MAINS

सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)

निर्धारित समय: तीन घंटे
*Time Allowed: **Three Hours***

अधिकतम अंक: 250
Maximum Marks: 250

सामान्य अनुदेश

इस प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका में 55+1 पृष्ठ हैं। प्रश्न-पत्र, क्यू.सी.ए. पुस्तिका के अंत में संलग्न है, जो अलग (वियोज्य) किया जा सकता है और उम्मीदवार परीक्षा के उपरांत अपने साथ ले जा सकते हैं।

रफ कार्य के लिए, इस पुस्तिका के अंत में खाली पृष्ठ दिया गया है।

पुस्तिका प्राप्त होने पर, कृपया यह जांच कर लें कि इस क्यू.सी.ए. पुस्तिका में कोई कमी न हो, फटा हुआ पृष्ठ न हो अथवा कोई पृष्ठ गायब न हो इत्यादि। यदि ऐसा हो, तो इसके बदले नई क्यू.सी.ए. पुस्तिका प्राप्त कर लें।

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This Question-Cum-Answer (QCA) Booklet contains 55+1 pages. Question Paper in detachable form is available at the end of the QCA Booklet which can be taken away by the candidate after examination

For rough work, blank page has been provided at the end of this Booklet

On receipt of the Booklet, please check that this QCA Booklet does not have any shortcomings, torn or missing pages etc. If, so, get it replaced with a fresh QCA Booklet.

(उम्मीदवार द्वारा भरा जाएगा/To be filled by the Candidate)

पंजीकरण सं./Registration No. : 01157317

अभ्यर्थी का नाम/Name of Student : NIKHIL SHARMA

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

25/08/2024

सामान्य अध्ययन (प्रश्न पत्र-III)
GENERAL STUDIES (Paper III)

केंद्र
Centre

CP TOWER-I

Ravi

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	महत्वपूर्ण अनुदेश	Important Instructions
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1	(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें। (ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।	(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates. (b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet
2	अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।	Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.
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4	उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।	Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.
5	उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।	Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.
6	प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।	Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.
7	प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।	Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.
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प्राप्तांक के विवरण (परीक्षक द्वारा भरा जाए)/ Marks Details (To be filled by the Examiner(s))

प्रश्न सं. Q. No.	अंक Marks		प्रश्न सं. Q. No.	अंक Marks	
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		
उप-योग (A) Subtotal (A)			उप-योग (B) Subtotal (B)		
सकल योग (A+B) / GRAND TOTAL (A+B)					

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INSPIRING INNOVATION

ABHYAAS MAINS

सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)

निर्धारित समय: **तीन** घंटे Time Allowed: **Three** Hours	अधिकतम अंक: **250** Maximum Marks: **250**

प्रश्न-पत्र संबंधी विशेष अनुदेश

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

*कुल **बीस** प्रश्न दिए गए हैं जो **हिंदी** और **अंग्रेजी** दोनों में छपे हैं।*

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions.

*There are **TWENTY** questions printed both in **HINDI** and in **ENGLISH***

All questions are compulsory.

The number of marks carried by a question/part is indicated against it.

Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one.

Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.

Keep the word limit indicated in the questions in mind.

Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. खाद्य प्रसंस्करण उद्योग का तीव्र विकास किस प्रकार भारत में खाद्य सुरक्षा संबंधी चुनौतियां उत्पन्न कर रहा है? (उत्तर 150 शब्दों में दीजिए)

How is the rapid growth of the food processing industry leading to food safety challenges in India? (Answer in 150 words) 10

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
Candidates must not write on this margin

With Annual average growth rate of 7.76%, food processing industry is one of the sunrise sectors in India. This has also, however increased the role of food safety agencies of India

---

Rapid growth of food processing industry : food safety challenges

---

① Rise in fats, sugars in ultra processed foods → leading to non communicable disease burden

② Tackling of ~~infiltra~~ adulteration : rising instances at local level

③ Incidences of rising infections in meat processing Industries : as Indian animals in India are not bred for food

④ lack of administrative capacity with FSSAI to ensure tracking of threats at local level.

उम्मीदवारों को इस मार्जिन में नहीं लिखना चाहिए
Candidates must not write on this margin

⑤ False advertising of the products on the internet and televisions

⑥ Shrinkflation → reducing the amount of material provided in the same price

Steps taken
- → removal of trans fats (FSSAI)
- → eat right movement
- → initiative to remove reused oil from street vendors for Biodiesel
- → FIT India Campaign

Way forward

① Awareness generation through FSSAI advertisements.

② ~~strengthening~~ strengthening the Administrative structure of FSSAI → filling vacancies

③ Surprise inspections at local level.

④ Aligning the food safety standards to the international standards

To ensure that FPEs in India remain healthy for population collaboration with industry to ensure safety is paramount.

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2. भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Public distribution system in India provides food grains to the ~~target~~ targeted population at low prices to ensure food security.

Fair price shops as an evolving process

① Started with Targeted public distribution system
↓
Shops were usually merged with local shopkeepers

② With involvement of National food security Act
→ special Ration shop created at local levels

③ Rise in use of technology is now present
④ One Nation one ration card scheme and using of adhar in the scheme.

④ onus on the states to setup the Fair price shops

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उम्मीदवारों को इस मार्जिन में नहीं लिखना चाहिए
Candidates must not write on this margin

Issues that are still present

(1) false positives and negatives : leading to exclusion from the process of low priced food grains

(2) Non implementation of one nation one ration card : lack of political will.

(3) Leakages from the Fair price shops : siphoning of funds as rations

(4) urban bias in the shops : lack of presence in rural regions

(5) lack of electricity in rural areas

Way forward

- Including civil society in implementation : to tackle corruption.
- GPS tracking of food supplies
- DBT coupons / food coupons can be implemented to tackle the leakage (used in Bihar)

To further ensure the efficiency implementation of Shanta kumar committee can go a long way in efficient functioning of fair price shops.

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3. भारत में एग्रीटेक स्टार्ट-अप्स किसानों की कृषि उत्पादकता एवं बाजार पहुंच बढ़ाने में किस प्रकार मदद कर रहे हैं? (उत्तर 150 शब्दों में दीजिए)

How are agri-tech startups in India helping farmers in enhancing farm productivity and market access? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

With low productivity of Indian agriculture (only 15% to GDP of India) and high dependence on of youth (45% employment), the intervention of startup ecosystem in farming ecosystem can go a long way.

Agritech startups in Farming sector : Farm productivity and market Access

① Increasing the funding to farmers
   ⓔ P2P India by Neha Jimeja to ensure funding.

② enhancing the market information
   ⓔ e-Sagu by IIIT hyderabad for ensuring information is present.

③ Ensuring practices are in sync with increasing productivity ⓔ using drones by startups to spray fertilizers.

④ & Increasing formations of to farmer producer organizations ⓔ Startup by Ankit Sarvar

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

(5) To ensure that connectivity of farmers ~~connectors~~ to market (eg) IFFCO uses various provisions in this matter.

(6) New crops and fertilizers to the farmers

~~(eg) stock~~ → startups in the biotechnology

(7) Startups are forming an interface between the government and farmers ensuring implementation of schemes.

Issues → Digital divide in rural areas (4% population has access to internet)

→ most startups in IT sector

→ lack of awareness among farmers

→ legacy issues of land fragmentation and low productivity of soil.

Now MS Swaminathan observed that while technology can increase yield, income increase of farmers can only come with synergy in public policy and technology.

4. भारत में भूमि सुधारों के प्रभावी कार्यान्वयन में भूमि अभिलेखों के डिजिटलीकरण की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Discuss the role of digitization of land records in the effective implementation of land reforms in India. (Answer in 150 words) 10

उम्मीदवारों को इस मार्जिन में नहीं लिखना चाहिए Candidates must not write on this margin

With 2/3rd of Judicial cases about the land disputes, land reforms surrounding the digitization can significantly increase the free and clean land titles in India.

Role of digitization of land records in implementing land reforms

① ensure conclusive titling : reducing the property disputes → collateral for loans and increase in productivity of farming ~~sector~~ sector

② Implementation of government programs regarding land to tiller will be easier at full implementation.

③ Inclusion of private sector in the land reform process due to digital maps

④ cadastral maps on internet will enhance infrastructure

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Infrastructural development at rural areas → through land pooling of clean lands

(5) lack of tempering of land records (eg) Karnataka has used blockchain in the process

(6) Increasing movement towards co-operative farming and contract farming with digital land titles

(7) Reduction in corruption at local level regarding titling of land

Issues → digital divide acting as a big hurdle

→ lack of clean titles to begin with.

→ hard to digitise conflicted lands

→ lack of private sector participation in the process

In this regard the scheme such as SVAMITVA and digital land record modernisation program can go a long way if properly implemented.

5. भारत को अपने जनसांख्यिकीय लाभांश का पूर्ण उपयोग करने और आर्थिक विकास में तेजी लाने के लिए एक विनिर्माण-केंद्रित विकास मॉडल को अपनाने की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

To fully exploit its demographic dividend and accelerate economic growth, India needs to adopt a manufacturing-led growth model. Discuss. (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

With India experiencing demographic dividend from 2016 to 2055 (37 years), the contribution of Industrial sector (12% to GDP) is far too low to ensure employment to the dividend and its utilization.

Need of manufacturing led growth model: to exploit demographic dividend and economic growth

① Employment intensive sector

(a) Textile sector and largest employment provider after agriculture

② Good jobs are created with in the industrial sector

- growth prospects, social security among others.

③ Service sector requires high skills, not available with Indian youth

(5% skilled population, 520 mus)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

④ Infrastructure development for Industry expansion will create multiplier effect

- more jobs
- more savings
- virtuous cycle of growth

⑤ To make export sector sector competitive

ⓐ MSME contributing to 45% of exports.

⑥ Overdependency of Agriculture sector will be removed

→ issue of underemployment

Issue

- → dominance of service sector in Indian economy (~55% part in GDP)
- lack of Industry Academia linkage
- lack of requisite infrastructure: last mile connectivity absent.

Moving ahead skilling of population through PM Kaushal vikas yojana, and implementation of make in India and production linked incentives can go a long way.

6. जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

With 7516 km coastline and presence in tropical region, coastal regions of India and its population face several threats exacerbated by the impact of climate change.

threats to the coastal population
- → rising number of cyclones due to global warming
- → rise in sea level (3.5 mm increase ~~bf~~ between 2013 and 2022)
- → instances of oil pollution
- → decreases in productivity in fishery sector
- → Tsunamis

Ways to tackle the issues

① Diversifying the employment portfolio

→ moving ~~up~~ away from fishery dependency to ~~vi~~ viable manufacturing sector employments

↓ reducing the population in the area

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

(2) capacity building among the population : regarding cyclones and ~~Tsunamis~~ ~~Tsun~~ Tsunamis

(3) Early warning framework to ensure that threats are identified

(4) Hazard zoning to ensure infrastructure is not created in ~~vulner~~ vulnerable areas

(5) Implementation of disaster management plan at local level with civil society

(6) cyclone shelters to ensure protection from cyclones

(7) Awareness among the population regarding the threats identified

(8) ~~Remove~~ Replacement of poor quality material houses with concrete houses

~~Except~~ Implimentation of these measures can push India towards achieving the Sendai framework goal of reducing mumbers people affected from disasters.

7. भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 शब्दों में दीजिए)

How does the Green Credit Programme extend beyond carbon management to promote a more sustainable environment in India? What are the various concerns about its implementation? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Green credit program works on the approach of providing credits for implementation of environmentally sustainable activities, which are freely tradable.

Green Credit program → Includes credits for Afforestation, renewable energy, wetland conservation among other

Participation of Individuals as well as Industries

Tradable in the carbon market.

Impact of green credit program beyond carbon management: Sustainable environment

① Increase the incentive towards transition ~~towards~~ towards renewable energy

② Inclusion of Individuals → promoting the concept of ~~life~~ LiFE

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उम्मीदवारों को इस मार्जिन में नहीं लिखना चाहिए
Candidates must not write on this margin

③ Reducing greenhouse emmissions: decreasing the global warming

④ Afforestation like Activities likely to create positive impact on intergenerational equity

⑤ Companies can now ensure tradable permits are present to tackle the renewable energy challenge and ensure gradual transition

⑥ In sync with global initiatives such as carbon border adjustment mechanism

Concern in implementation
- lack of green credit market in India
- lack of awareness among industry and people about nuances of program
- Inclusion of hydropower in green credit a concern
- will take time to be implemented

To deal with the challenge stakeholder consultation along with syncing the activities with global standards is need of the hour.

8. जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)

What is the need for NavIC when existing satellite navigation systems are already available? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

NavIC provides for ~~indep~~ indigenous satellite navigation program to ensure tracking of location and ensuring the use of ~~global~~ location for various sector of Indian economy.

Need for NAVIC while other systems are available

① Compatible with Indian landscape : as specially designed for India

② ensuring its use in foreign policy : India provides services of NAVIC to neighbouring countries

③ Ensure the military applications are not compromised → vulnerability in case of other nation's navigation system.

④ Tackle the disaster management : rising instances of disaster in light of climate change

need a navigation system.

(5) Reducing the dependency of Indian startups ~~to~~ on foreign navigation system.

(6) Reduce the cost to the innovators through usage of indigenous system.

(7) Nuanced implimentation in Indian Agriculture to enhance productivity

Ensuring Synergy of NAVIC ~~with~~ with Indian ecosystem along with collaboration with private sector is the need of the hour

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
Candidates must not write on this margin

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9. साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

With the rise in penetration of Internet (739 million users in India) the threats of cyber are accelerated impacting the critical infrastructure to facilitate money laundering.

Cyber financial crime ⇒ money laundering is new frontier

① Rise in sophistication of attacks : (eg)

Ransome ware wannacry in 2019

② Penetration of internet leading to vulnerability of critical system

(eg) Cyber Attack on AIIMS

③ Inclusion of Blockchain technology : virtual removal of lawenforcement agencies from the supply chain

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

(4) lack of deterrence : use of proxy and virtual private network make it difficult to tackle the issue

(5) Fast innovation → security agencies playing catching up

Way forward for government

- → International collaboration
- → signing to Budapest convention
- → Training to White hat hackers
- → drawing positive points from Tallinn manual
- → Collaborating with private sector

In the recent time Nisty along with CERT-IN and National cyber crime co-ordination centre have ensure protection of infrastructure

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10. इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्रक में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. In light of this, explain why there is a need for technology absorption in the defence sector of India. What challenges can India face in this initiative? (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए

Candidates must not write on this margin

Technology plays a key role in defence sector pushing the military ahead of other nations and providing an edge in combat operations.

Need for tech adoption

① To keep up with the world (chinese use of technology)

② To maintain deterrence in Army

③ To ensure offensive capabilities are maintained

Challenges

① low Budgetary expenses

② lack of private sector participation

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③ lack of defence industry

Way forward — ensure private sector participation

→ increase budgetary spending

→ innovation through startups

This would put India ahead of other nations in moving towards AMRIT KAL of 2047.

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

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11. भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)
What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of India? Comment on the measures that have been taken to tackle these issues. (Answer in 250 words) 15

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
Candidates must not write on this margin

North east India Contributes 2% to the GDP, 4% of the total population of India and 8% of the land. Thus its natural resources and strategic position call for rapid development of Industries in the region.

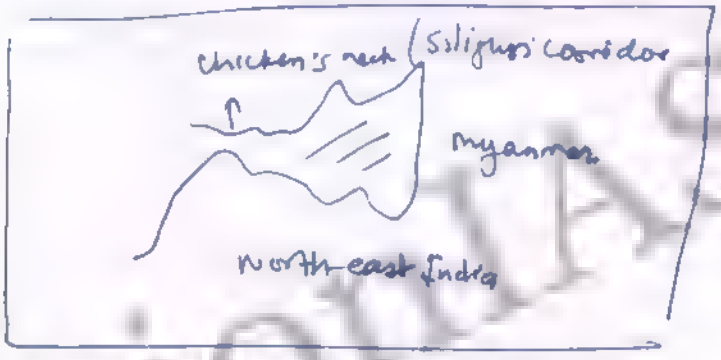

Fig - North east India

~~Fod~~ Issues faced in development of trade and Industries in the region

① Lack of connectivity → lack of development of roads railways among others have hindered communication.

② Lack of skill and education among the youth and gap between Industry and academics

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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(2) Difficult terrain leading to lack of development of large diversified industries

(4) Connection to strategic area → vulnerability to the golden triangle → drug trade issue

(5) Relative instability witnessed in North-east region

(6) Neglect of the region by mainstream India have also contributed to it.

Steps that have been taken

(1) Special ministry for North-east region → to provide special assistance to region

(2) Development of airports under UDAN to ensure connectivity

(3) Oil palm mission having special mission orientation towards North-eastern region

(4) expansion of gram Sadak yojana towards the North-eastern states

(5) Strategic measure along with Indian neighbours.

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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5.1 Akhaura–Agartala railway link

5.2 Kaladan multimodal project with Myanmar to ease transportation

5.3 Crucial part of Look and act east policy of India

Issues

- lack of implementation on ground
- Continuing instability (eg) Manipur crisis
- cultural disconnect between the mainland population and N-E region
- Slow development of skilling institutions

To move forward there is a need to utilise N-E region as crucial part of act east policy along with dedicated efforts to build infrastructure in the ambit of National Infrastructure pipeline.

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12. जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

In the era of climate change and growing water scarcity, how can micro-irrigation systems contribute to sustainable agricultural practices in India? (Answer in 250 words) 15

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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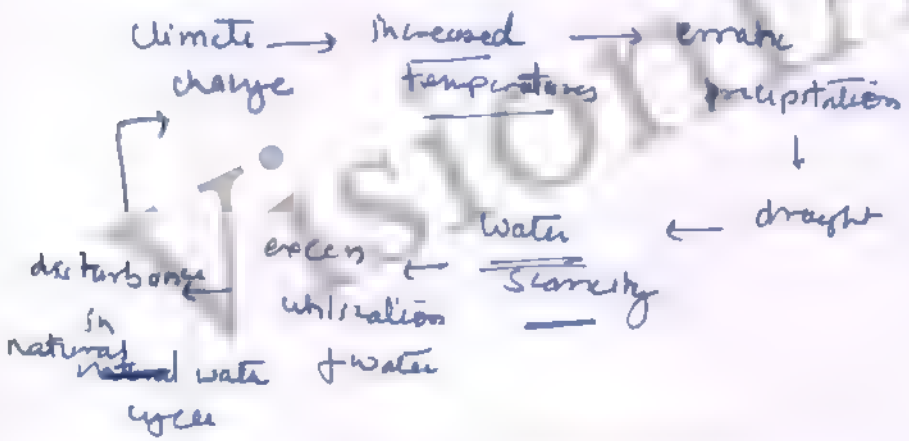
India consists of 18% of world's population but only 4% of water resources, contributing to water scarcity. This is further accelerated by the impact of rising temperatures around the world.

Climate change and growing water scarcity



Contribution that micro-irrigation systems can provide to sustainable agricultural practices

① less wastage of water ④ drip irrigation irrigating down at the roots.

② Suitable to all kinds of terrain ④ sprinkler irrigation

③ No issue of salinity as water logging is avoided

④ Do not get disturbed due to impact of winds

(eg) sub-surface irrigation

⑤ less energy requirement as compared to flood irrigation

⑥ Increased productivity : (eg) Fertigation (directly dropping fertilizers at root) practices can have increased yield.

⑦ lower pest attacks → as low moisture on the plants

(eg) central pivot irrigation)

Steps taken

→ ~~National~~ Per drop more crop

→ Harkhet ko Pani

→ National watershed development program

→ Fasal Bima yojana

→ alternates for water irrigation

Part of Pradhan Mantri Krishi sinchayi yojna

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Issues that are present

① expensive to install as compared to conventional methods

② Skills needed to operate : technical issue require expertise

③ low capital in the hands of farmer to install such systems

④ lack of incentive → Free electricity is being provided.

⑤ Penetration of technology (45% mechanization in India (57% in China)) relatively slow in rural areas

Way forward → Awareness generation
→ Co-operative farming
↓
switching towards investment in Agriculture infrastructure from subsidies (2-2.5% of GDP.)

whole of society approach is needed by government to make the transformation to efficient and remunerative agriculture

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13. भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल ढुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

Candidates must not write on this margin

Indian freight transportation consist of 4th largest freight carrier in the world, contributing 33% to the total modal mix in transportation (target 2030, 45%)

Issues that are present in freight transportation

① Cross-subsidization → charging more from freight transport as compared to customers
↳ decreasing the competitiveness in export market.

② slow speed of trains (23.6 km/h average speed) as compared to developed nations (50 kmph in US)

③ Turnaround time significantly higher at terminals as compared to developed Nations

④ Lack of separate tracks for freight trains → leading to overcrowding
(40% of rail route → more than 100% crowded)

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
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(5) frequent number of accidents : decrease in safety of freight carriers

(6) Dominance of Road transport (60%) with high kilometrage

(7) slow Technological Adoption and management issues (17 zones in railways) ⇒ delayed decision making

Steps taken
- → Dedicated Freight corridors
- National logistics policy
- National coal logistics policy
- multimodal logistics parks
- New technology (9) WDG engines

Steps / strategies Needed

(1) Private sector participation in the Freight terminals (Bibek Debroy committee)

(2) Pushing towards last mile connectivity to implementation of Sagarmala program to increase freight transport.

③ competitive pricing of the freight → reducing the cross subsidization

④ Reducing the logistics cost (10% of GDP (decreased from 14% of GDP)

⑤ Private sector participation in development of engines and racks.

⑥ & streamlining the management system of Indian railways → for ensuring quick decisions

⑦ Separate tracks for the freight ~~lines~~ carriers
→ Implementation of freight corridors

Along with this implementation of Kakodkar committee and Bibek debroy committee recommendation can further enhance the freight transportation in India.

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
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14. उन कारकों पर चर्चा कीजिए जिन्होंने नवीकरणीय ऊर्जा क्षेत्र में प्रभावशाली प्रगति करने और वैश्विक नवीकरणीय ऊर्जा परिवर्तन में अग्रणी के रूप में स्थापित होने में भारत की सहायता की है। (उत्तर 250 शब्दों में दीजिए)

Discuss the factors that have aided India in making impressive strides in the renewable energy sector and establishing itself as a frontrunner in the global renewable energy transition. (Answer in 250 words) 15

उम्मीदवारों के इस हाशिए में नहीं लिखना चाहिए
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With target of carbon ~~neut~~ neutality of zero, India has achieved 45.5% share in renewable energy and continuously pushing towards reducing CO_2 emmissions and decreasing the impact of globalwarming through efficient energy systems.

Factors that have aided in making impressive strides

(1) Political will : continuous push from government.

1.1 - FAME scheme for electricity vehicles

1.2 - PLI (Production linked Incentive) to manufacturing of solar panels

1.3 - state level policies → UP ~~gov~~ government providing subsidies for ~~high~~ hybrid vehicles

(2) Global energy transition/climate - shift of energy can be seen across the world, pushing India to do the same.

③ Alternative that have been utilised (e.g.) Biofuel energy push owing to large agricultural waste (₹ 9,000 crore every year)

④ Industry Academia linkage to provide technological support.

⑤ large skilled population to be employed (50.3% population employable acc to India skills report)

⑥ Startup ecosystem in the area (e.g. No electric scooters) (3rd largest startup ecosystem (more than 9000 startups)).

⑦ collaboration with the world (e.g. International solar alliance

Issues that are still present

① Rising costs associated with renewable transition → Subsidies are required adding to FISCAL Burden

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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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(2) lack of penetration of renewable energy at rural areas (48% still use wooden stoves)

(3) global opinion against nuclear energy, providing 1.6% to Indian energy mix

(4) Skilled population still low as compared to most of developed Nations (97% in Korea) (5% in India)

(5) Significant contribution of coal (50% of total mix)

Way forward

- Push by local state governments and local bodies (localisation of sustainable development goal)
- Global collaboration along with climate financing
- increasing investment in solar energy. (large resource)
- Push for carbon markets to ~~incentives~~ incentivise the transition (implementation of Pigovian tax)

Transition to renewable energy in India can help India achieve the sustainable development goal of clean energy.

15. उर्वरकों और कीटनाशकों से युक्त कृषि अपवाह पर्यावरण प्रदूषण में किस प्रकार योगदान देता है? कृषि अपवाह के प्रभाव को कम करने के लिए क्या उपाय अपनाए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

How does agricultural runoff containing fertilizers and pesticides contribute to environmental pollution? What measures can be taken to mitigate the impact of agricultural runoff? (Answer in 250 words) 15

उम्मीदवारों इस क्षेत्र में नहीं लिखना चाहिए Candidate must not write on this margin

With ~~pest~~ pesticide utilization of 0.1% at agricultural most of agricultural runoff contributes to environmental pollution in terms of bioaccumulation and algal blooms.

Agricultural runoff contribute to environmental pollution

(1) large amount of nutrients → Nitrogen, phosphorus allowing the rapid expansion of algal blooms
→ blocking and choking of river and water bodies.

(2) These nutrients accumulate in the body of the organism ie Biomagnification
(eg) Thinning of shells of Birds due to DDT

(3) change in environment of water bodies leads to increase in invasive species (4) Lantana camara

उम्मीदवारों को इस क्षेत्र में कुछ लिखना नहीं है
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(4) Death zones are created due to low oxygen presence

(5) Further the water from these bodies consist of algal toxins contributing to health hazards to animals and humans

(6) Speedy drying up of lake due to eutrophication
→ succession hastened leading to water scarcity

Measures that can be taken

(1) Reducing the use of pesticides and fertilizers
(eg) use of ZBNF (zero Budget Natural farming) to reduce the pesticide use

(2) Treatment of agricultural runoff before contaminating water bodies : ie waste management and treatment plants

(3) Use of ~~[illegible]~~ Biological methods to control the

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pests (e) Trap crops and biocontrol agents to reduce the pesticide use and increase yield.

(4) Reducing the subsidy on the fertilizers ⇒ reducing the availability of fertilizers to move towards natural solutions.

(5) Frequent cleaning of water bodies to reduce the increase flora and improve oxygen content.

(6) Watershed management program (e) Neem-Neem in Rajasthan

Steps taken → Water pollution (Prevention) Act

→ Environmental protection Act. 1986

→ Namami Ganga program

→ Namami Devi Narmada

Along with the top down approach, a civil-government collaboration is needed to ensure that awareness generation happens at grassroot levels

16. हिमालयी राज्यों में पर्यटकों की बढ़ती संख्या ने उनके पारिस्थितिकीय समावेशन क्षमता को पार कर लिया है, जिसके कारण बड़े पैमाने पर मानव-जनित आपदाएं उत्पन्न हुई हैं। संधारणीय पर्यटन को बढ़ावा देते हुए ऐसी आपदाओं को रोकने के लिए क्या उपाय किए जा सकते हैं? प्रासंगिक उदाहरणों के साथ चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

The growing influx of tourists in Himalayan states has breached their ecological carrying capacity, leading to significant man-made disasters. What measures can be implemented to prevent such disasters while promoting sustainable tourism? Discuss with relevant examples. (Answer in 250 words) 15

उम्मीदवारों को इस मार्जिन में नहीं लिखना चाहिए
Candidates must not write on this margin

Carrying capacity of an ecosystem essentially implies maximum number of biodiversity and human encroachment it can sustain. Due to rising infrastructure development Himalayan carrying capacity have been on Brink line.

growing influx of tourists : rising man-made disasters

① Rising infrastructure projects impacting the mountains (eg) Sela tunnel tunneling through the mountains

② Rising waste in the himalayan area → impact of biodiversity

③ Unsustainable tourism : Hotels and town growth are ~~haphaz~~ haphazardous (eg) uttarakhand ~~tragy~~ tragedy in 2013 due to haphazardous planning

(4) Rising number of vehicles : CO_2 emmissions → leading to melting of the glaciers → rising number of landslides

(5) Man made dams to sustain water supply for tourists → impact of earthquakes

---

Measures that can be taken to balance rising tourism with prevention of disasters

---

(1) Implementing limit on number of tourists :

(a) Being done in Venice to reduce impact through taxes and ticket prices

(2) Environmental impact Assessment and involvement of Public before commence of projects.

(3) Hazard mapping of the areas to avoid construction on the vulnerable areas.

(4) Early warning system to reduce the disasters in

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उम्मेदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

the last stages.

(5) Earthquake resistant engineering to reduce the risk (Himalayas included in Zone V related to earthquakes)

(6) Participation of local society to assess the impact of rising tourism to ensure grassroot communication.

(7) Switching to renewable energy in long term to ensure reducing impact on glaciers (2070 carbon neutrality)

(8) Initiatives of sustainable tourism i.e respecting the culture of hill population along with environmental sustainability.

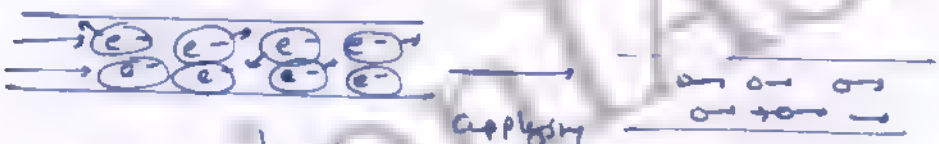
To implement those measures will of political leaders along with collaboration with private sector is the need of the hour.

17. सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रकों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words) 15

Superconductors allow the transfer of electricity with negligible resistance while cooled at super low temperature. This ensures practical applications in varying space of ~~sum~~ scientific development.

Superconductor



applying of electricity at very low temperature → super conductivity

critical temperature

drastic reduction in the resistance ~~ofered~~

Fuel innovation in diverse fields

(1) low resistance → applied in electric ~~gadgets~~ gadgets (eg) semiconductors in the mobile phones → Potentially increasing the battery life.

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
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(2) efficient flow of ~~elect~~ electricity allow continuous flow for a long time → can be implemented in operation of maglev trains and hyperloop technology (IIT Madras) working on it

(3) Renewable energy transition → due to efficient transfer and ~~conversion~~ conversion of electricity (to ensure 50% renewable energy goal)

(4) In the scientific experiments

(a) CERN and other experiments such as Tokamak → efficiency of ~~elect~~ electricity can be increased

(5) Rising use of in Artificial intelligence

5.1 ↳ Better computing power

5.2 ↳ Better analysis of data through faster speed

5.3 ↳ Emphasis on machine learning

5.4 ↳ increasing domestic development of super computers at high speeds

(6) Innovation at ~~Dro~~ aviation field with reduced fuel usage

(eg) Drones can be manufactured that employ less heavy batteries

(7) Converting fresh water from salty water can be made energy efficient through use of superconductivity

(8) Robotics ~~are~~: a major area to improve the manufacturing lines and save cost and time.

To implement these model collaboration with private sector and continuous incentive incentives are the need of the hour. India can leap frog into the future if the potential is utilised

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यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामकिय और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तार वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words) 15

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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IPRs (Intellectual property rights) are Creations of the mind including Innovation, music, variety which be tangible or intangible. To protect these India implements host of laws ensuring remuneration to Innovators.

Laws of India for intellectual property rights

① Patent Act, 1957 → to ensure patent for intangible creations.

② Geographical Indications Act → for GI (geographical Indication) Tags for particular regions

③ Protection of plant variety Act : to ensure protections rights of plant varieties and commercial breeding

④ Signing of TRIPS (Trade in intellectual property rights) → implemented in domestic laws.

Challenges that present: enforcement, regulatory and administrative

① Issues related to the Administrative area of patents

(a) giving patents by hired workers was an issue, with ministry reversing the patents

② Delay in the patent allo. to of a particular innovation

③ Vacancies in the Administrative posts: further delaying the procedure

④ frequent recourse to the compulsory licensing → impacting the rights of innovators

⑤ sui-generis nature of protection of plant varieties Act: allows for breeding of patented crops by farmer

⑥ Lack of expertise in the ministries regarding patent rights.

⑦ Lack of enforceability: (a) rising issues of Internet piracy

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Way forward

① Implementing the international standards in the laws : ensuring sync with the TRIPS

② less use of compulsory licensing to ensure protection of rights.

③ Awareness generation among population ④ IPR mascot

④ Streamlining the administrative authority : ensuring reduced time for granting of patents patents

⑤ Strict law enforcement : to tackle the ~~viol~~ violation of IPR laws on internet.

⑥ Industry ~~Acad~~ Academia linkage to ensure rise in innovation at universities

Along with this collaboration international partners at multilateral platforms will go a long way in ~~implem~~ solving the issues.

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19. एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों में दीजिए)

Keeping in view the challenges in creating integrated theatre commands, examine how the theaterisation of commands can lead to greater integration and rationalisation of manpower and resources among the three services. (Answer in 250 words) 15

Theatre commands essentially argue for synergy between the three armed forces under a single officer, ensuring combat readiness and efficiency in operation.

Three theatre commands in India

- Andaman and Nicobar theatre command
- Strategic forces theatre command (Nuclear weapons)
- Space theatre command

Significance of theatre commands: greater integration rationalization of manpower and resources

① greater synergy among the forces: ⑨

inefficient co-ordination led to disaster result in 1962 Sino-India war

उम्मीदवारों को इस क्षेत्र में कोई विवरण नहीं लिखना चाहिए
Candidates must not write on this margin

(2) Pooled procurement of the weapons and resources → increasing efficiency and reducing costs

(3) Combat readiness – given the threat of China and Pakistan on borders

(4) Allowing for greater modernization of armed forces : training ~~within~~ among each other

(5) following the strategy of ~~US~~ developed nations

(eg) US and China have already developed ~~three~~ theatre commands

Challenges that are present

(1) slow procedure : it takes significant time to develop synergy among the armed forces.

(2) late start by the Indian government as compared to China

(3) Training of forces under single ~~com~~ commanding force is a challenge

(4) At the same time keeping Armed forces ready for combat even during the transition is essential

(5) Requirement of political will at the higher levels is top necessity.

(6) Along with theatre commands : the end to goal is to ensure combat effectiveness requiring

- Significant rise in domestic defence manufacturing Industry is needed
- balance ~~strain~~ imports from various the partners needed
- Continuing army exercise with different Nations

Way forward

- Raising defence expenditure (low as compared to China)
- expeditious approvals at higher levels
- modernisation of armed forces along with Theaterization.

To ensure that India remains at top of its capability in volatile international environment, theaterization is one of the essential requirements.

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सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

Treating border villages as first villages not just geographically but also in terms of facilities can be a key strategy for enhancing border security. Discuss. Also, highlight the measures being taken by the government in this regard. (Answer in 250 words) 15

उम्मीदवारों को इस क्षेत्र में नहीं लिखना चाहिए
Candidates must not write on this margin

With rise in incursions from Northwest and Northeastern borders, the importance of border villages have risen in recent times. Border villages have the potential to act as first response to India to eventualities

Importance of border villages ~~treating them~~

- Strengthening our claims on border areas
- Tackling the threat of drug issues (eg) Northwest border
- Surveillance mechanism for enemy movement.
- Tackling the behaviour of China : Xiaokang villages around India

Treating them as first villages geographically as well as in terms of facilities : Strategy

① Implementing the Infrastructure projects to ensure →

movement of military vehicles → Facilitate to the villagers.

② ~~Train~~ Training of villagers in surveillance mechanisms as well as skill development : to ensure migration does not happen from these areas

③ Dominant role of armed forces → to develop social capital and to tackle issue of overground workers (eg J&K) issue

④ Provision of internet to border villages to ensure connectivity with mainland

⑤ government schemes & Infrastructure for civilians such as PM AWAS yojana have to been implemented in border areas first.

⑥ Need of Actual collaboration with villagers at political level → democratization of political process is need of the hour.

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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Steps taken → Border roads organization to ensure infra development.

→ Development of Adarsh Grams at border areas to ensure provision of ~~facilities~~ facilities

→ operation Sadbhavana by army in JKL

→ Bharatnet to provide internet to remote areas

→ use of modern technologies such as Drones to ensure surveillance

To further increase the usefulness, eventually strong connect with the local population along the local civil society can be instrumental way forward

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